SERVICE MANUAL

AE- 4 CHASSIS

MODEL	COMMANDER	DEST	CHASSIS NO.
KV-28WF3A	RM-862	Italian	SCC-K43L-A
KV-28WF3B	RM-862	French	SCC-K45N-A
KV-28WF3D	RM-862	AEP	SCC-K41N-A
KV-28WF3E	RM-862	Spanish	SCC-K42L-A
KV-28WF3K	RM-862	OIRT	SCC-K44M-A

MODEL	COMMANDER	DEST	CHASSIS NO.
KV-32WF3A	RM-862	Italian	SCC-K43K-A
KV-32WF3B	RM-862	French	SCC-K45M-A
KV-32WF3D	RM-862	AEP	SCC-K41M-A
KV-32WF3E	RM-862	Spanish	SCC-K42K-A
KV-32WF3K	RM-862	OIRT	SCC-K44L-A

MICROFILM

TRINITRON® COLOR TV

SONY®

ITEM MODEL	Television System	Stereo System	Channel Coverage	Color System
Italian	B/G/H, D/K	GERMAN Stereo	ITALIA VHF : A-H2 (C) UHF : 21-69 PAL B/G/H VHF : E2-E12 UHF : E21-E69 CABLE TV (1) : S1-S41 CABLE TV (2) : S01-S05, M1-M10, U1-U10	PAL NTSC4.43, NTSC3.58 (VIDEO IN)
French	B/G/H, D/K, L, I	GERMAN/NICAM Stereo	L VHF : F02-F10 UHF : F21-F60 CABLE : B-Q B/G/H VHF : E2-E12 UHF : E21-E69 CABLE TV (1) : S1-S41 CABLE TV (2) : S01-S05, M1-M10, U1-U10 ITALIA VHF : A-H2 (C) UHF : 21-69 I UHF : B21-B69	PAL, SECAM NTSC4.43, NTSC3.58 (VIDEO IN)
AEP	B/G/H, D/K	GERMAN Stereo	PAL B/G/H VHF : E2-E12 UHF : E21-E69 CABLE TV (1) : S1-S41 CABLE TV (2) : S01-S05, M1-M10, U1-U10 ITALIA VHF : A-H2 (C) UHF : 21-69 D/K VHF : R01-R12 UHF : R21-R69	PAL, SECAM NTSC4.43, NTSC3.58 (VIDEO IN)
Spanish	B/G/H, D/K	GERMAN/NICAM Stereo	PAL B/G VHF : E2-E12 UHF : E21-E69 CABLE TV (1) : S1-S41 CABLE TV (2) : S01-S05, M1-M10, U1-U10 ITALIA VHF : A-H2 (C) UHF : 21-69 D/K VHF : RO1-R20 UHF : B21-B69	PAL, SECAM NTSC4.43, NTSC3.58 (VIDEO IN)
OIRT	B/G/H, D/K	GERMAN/NICAM STEREO	PAL B/G/H VHF : E2-E12 UHF : E21-E69 CABLE TV (1) : S1-S41 CABLE TV (2) : S01-S05, M1-M10, U1-U10 ITALIA VHF : A-H2 (C) UHF : 21-69 D/K VHF : R01-R12 UHF : R21-R69	

MODEL	28WF3A	28WF3B	28WF3D	28WF3E	28WF3K	32WF3A	32WF3B	32WF3D	32WF3E	32WF3K
Power Consumption	108 W	119 W	119 W	119 W	119 W	118 W	132 W	132 W	132 W	132 W

[PICTURE TUBE]

KV-28WF3 Super Trinitron
Approx. 71cm (28 inches)
(Approx. 66cm picture measured diagonally)
110 degree deflection

KV-32WF3 Super Trinitron
Approx. 82cm (32 inches)
(Approx. 76cm picture measured diagonally)
110 degree deflection

Input/Output Terminals

[REAR]

1 21-pin Euro connector (CENELEC standard).
- Inputs for Audio and Video signals.
- Inputs for RGB.
- Outputs of TV Video and Audio signals.

2/2 21-pin Euro connector.
- inputs for Audio and Video signals.
- inputs for S Video.
- outputs for Audio and Video signals (selectable).

Phono Jack
- Outputs for Audio Signals

[FRONT]

3 Video input - phono jack

3 Audio inputs - phono jacks

3 S Video input 4 pin DIN

Headphone jacks : stereo minijack

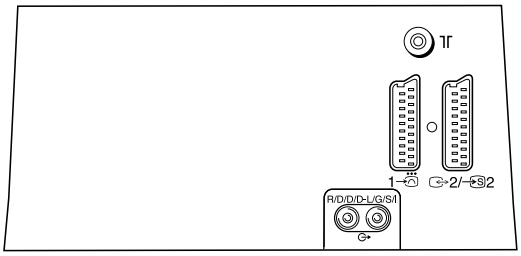
Sound output	2 x 20W (Music Power)
Power requirements	220 - 240V
Dimensions	
KV-28WF3	Approx 690x535x534mm
KV-32WF3	Approx 789x602x576mm
Weight	
KV-28WF3	Approx 38kg
KV-32WF3	Approx 55.5kg
Supplied accessories	RM-862 Remote Commander (1) IEC designated R6 battery (2)
Other features	DNR (Digital Noise Reduction), Digital Plus. NICAM*, FASTEXT, TOPTEXT *(KV-28WF3B/28WF3E/28WF3K/ 32WF3B/32WF3E/32WF3K only)

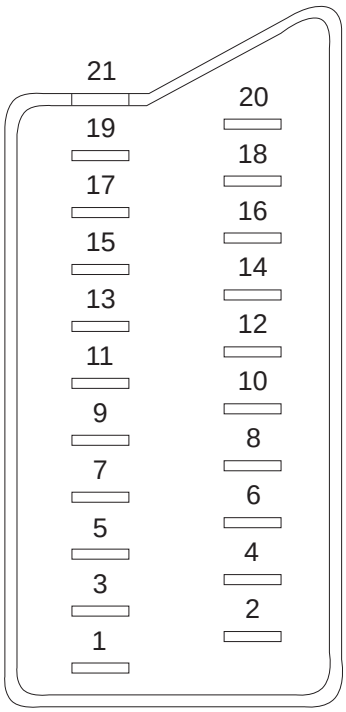
[RM-862]

Remote control system	infrared control
Power requirements	3V dc (2 Batteries) R6 (Size AA)
Dimensions	Approx 210x56x24mm (w/h/d)
Weight	Approx 110g (Not including battery)

Model Name / Item	KV-28WF3A KV-32WF3A	KV-28WF3B KV-32WF3B	KV-28WF3D KV-32WF3D	KV-28WF3E KV-32WF3E	KV-28WF3K KV-32WF3K
Pal Comb	OFF	OFF	OFF	OFF	OFF
PIP	OFF	OFF	OFF	OFF	OFF
RGB Priority	OFF	OFF	OFF	ON	OFF
Woofer Box	OFF	OFF	OFF	OFF	OFF
Scart 1	ON	ON	ON	ON	ON
Scart 2	ON	ON	ON	ON	ON
Front in (3)	ON	ON	ON	ON	ON
Scart 4	OFF	OFF	OFF	OFF	OFF
Projector	OFF	OFF	OFF	OFF	OFF
AKB in 16:9 mode	ON	ON	ON	ON	ON
Norm B/G/H	ON	ON	ON	ON	ON
Norm I	OFF	ON	OFF	OFF	OFF
Norm D/K	ON	ON	ON	ON	ON
Norm AUS	OFF	OFF	OFF	OFF	OFF
Norm L	OFF	ON	OFF	OFF	OFF
Norm SAT	OFF	OFF	OFF	OFF	OFF
Norm M	OFF	OFF	OFF	OFF	OFF
Teletext	ON	ON	ON	ON	ON
Nicam Stereo	OFF	ON	OFF	ON	ON
Language Preset	Italian	French	German	Spanish	OIRT

21 pin connector (1→ , 2 / S2)

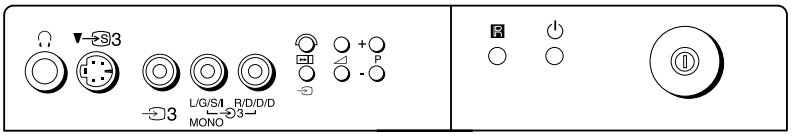




Pin No	1	2	4	Signal	Signal level
1	○	○	○	Audio output B (right)	Standard level : 0.5V rms Output impedence : Less than 1kohm*
2	○	○	○	Audio output B (right)	Standard level : 0.5V rms Output impedence : More than 10kohm*
3	○	○	○	Audio output A (left)	Standard level : 0.5V rms Output impedence : Less than 1kohm*
4	○	○	○	Ground (audio)	
5	○	○	○	Ground (blue)	
6	○	○	○	Audio input A (left)	Standard level : 0.5V rms Output impedence : More than 10kohm*
7	○	●	●	Blue input	0.7 +/- 3dB, 75 ohms positive
8	○	○	○	Function select (AV control)	High state (9.5-12V) : Part mode Low state (0-2V) : TV mode Input impedence : More than 10K ohms Input capacitance : Less than 2nF
9	○	○	○	Ground (green)	
10	○	○	○	Open	
11	○	●	●	Green	Green signal : 0.7 +/- 3dB, 75 ohms, positive
12	○	○	○	Open	
13	○	○	○	Ground (red)	
14	○	○	○	Ground (blanking)	
15	○	–	–	Red input	0.7 +/- 3dB, 75 ohms, positive
	–	○	○	(S signal Chroma input)	0.3 +/- 3dB, 75 ohms, positive
16	○	●	●	Blanking input (Ys signal)	High state (1-3V) Low state (0-0.4V) Input impedence : 75 ohms
17	○	○	○	Ground (video output)	
18	○	○	○	Ground (video input)	
19	○	○	○	Video output	1V +/- 3dB, 75ohms, positive sync 0.3V (-3+10dB)
20	○	–	–	Video input	1V +/- 3dB, 75ohms, positive sync 0.3V (-3+10dB)
	–	○	○	Video input Y (S signal)	1V +/- 3dB, 75ohms, positive sync 0.3V (-3+10dB)
21	○	○	○	Common ground (plug, shield)	

○ Connected ● Not Connected (open) * at 20Hz - 20kHz

Pin No	Signal	Signal level
1	Ground	
2	Ground	
3	Y (S signal) input	1V+/- 3dB 75 ohm, positive Sync 0.3V -3/+10dB
4	C (S signal) input	0.3V+/- 3dB 75 ohm, positive Sync



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CAUTION

SHORT CIRCUIT THE ANODE OF THE PICTURE TUBE AND THE ANODE CAP TO THE METAL CHASSIS, CRT SHIELD, OR THE CARBON PAINTED ON THE CRT, AFTER REMOVAL OF THE ANODE CAP

WARNING !!

AN ISOLATING TRANSFORMER SHOULD BE USED DURING ANY SERVICE WORK TO AVOID POSSIBLE SHOCK HAZARD DUE TO LIVE CHASSIS. THE CHASSIS OF THIS RECEIVER IS DIRECTLY CONNECTED TO THE POWER LINE.

SAFETY-RELATED COMPONENT WARNING !!

COMPONENTS IDENTIFIED BY SHADING AND MARKED ⚠ ON THE SCHEMATIC DIAGRAMS, EXPLODED VIEWS AND IN THE PARTS LIST ARE CRITICAL FOR SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

ATTENTION

APRES AVOIR DECONNECTE LE CAP DE'LANODE, COURT-CIRCUITER L'ANODE DU TUBE CATHODIQUE ET CELUI DE L'ANODE DU CAP AU CHASSIS METALLIQUE DE L'APPAREIL, OU AU COUCHE DE CARBONE PEINTE SUR LE TUBE CATHODIQUE OU AU BLINDAGE DU TUBE CATHODIQUE.

ATTENTION !!

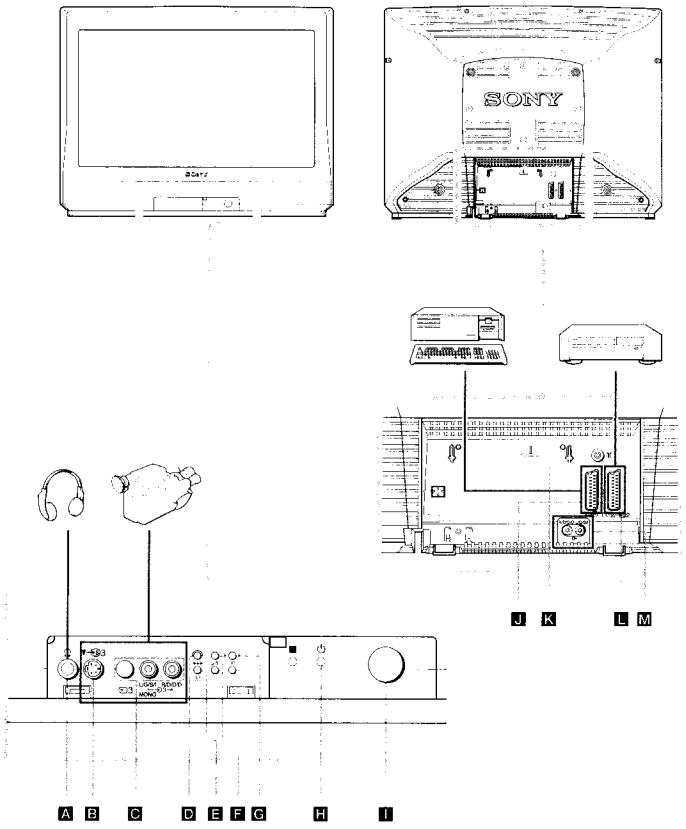
AFIN D'EVITER TOUT RISQUE D'ELECTROCUTION PROVENANT D'UN CHÁSSIS SOUS TENTION, UN TRANSFORMATEUR D'ISOLEMENT DOIT ETRE UTILISÈ LORS DE TOUT DÈPANNAGE. LE CHÁSSIS DE CE RÈCEPTEUR EST DIRECTMENT RACCORDÈ Á L'ALIMENTATION SECTEUR.

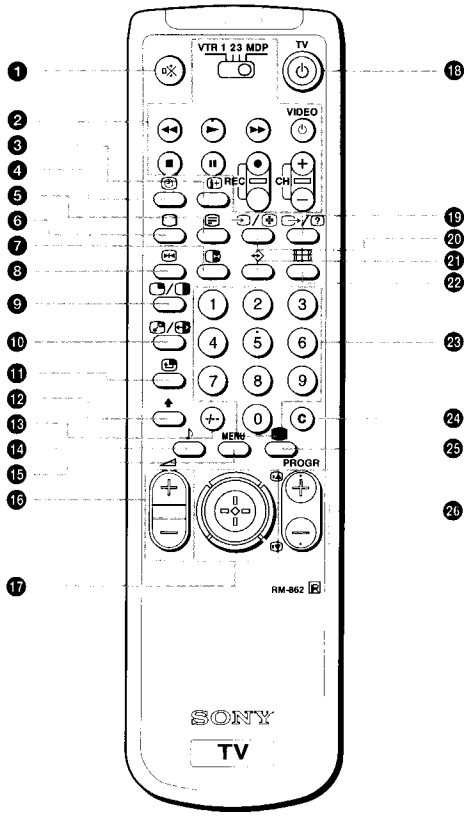
ATTENTION AUX COMPOSANTS RELATIFS Á LA SÈCURITÈ !!

LES COMPOSANTS IDENTIFIÈS PAR UNE TRAME ET PAR UNE MARQUE ⚠ SUR LES SCHÈMAS DE PRINCIPE, LES VUES EXPLOSÈES ET LES LISTES DE PIECES SONT D'UNE IMPORTANCE CRITIQUE POUR LA SÈCURITÈ DU FONCTIONNEMENT, NE LES REMPLACER QUE PAR DES COMPSANTS SONY DONT LE NUMÈRO DE PIÈCE EST INDIQUÈ DANS LE PRÈSENT MANUEL OU DANS DES SUPPLÈMENTS PUBLIÈS PAR SONY.

SECTION 1 GENERAL

The operating instructions mentioned here are partial abstracts from the Operating Manual. The page numbers of the Operating Instruction Manual remain as in the manual.



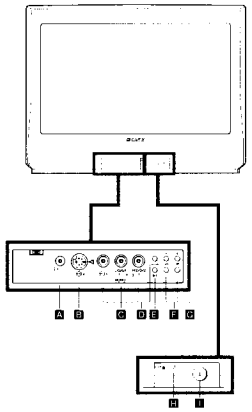


Overview

This section briefly describes the buttons and controls on the TV set and on the Remote Commander. Please open the flaps at the front and at the back of the Instruction Manual for detailed illustrations of the Remote Commander and the TV set. Letters in boxes refer to the buttons and connectors on the TV set, numbers in circles to the buttons on the Remote Commander. For more information, refer to the pages given next to each description.

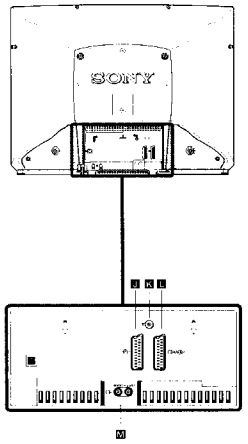
TV set – front

Reference and Symbol	Name	Refer to page
A	Headphones jack	35
B	S video input jack	40
C	Input jacks (video, audio)	40
D	Reset button	28
E	Input mode button	28
F	+/- Volume control	28
G	P +/- Programme buttons	28
H	Standby mode indicator	28
I	Main power switch	28



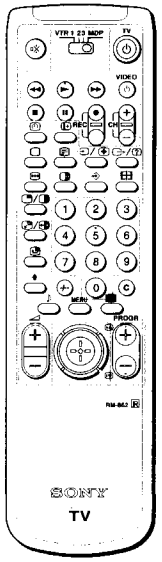
TV set – rear

Reference and Symbol	Name	Refer to page
J	1	21-pin Euro connector	40
K	Aerial socket	26
L	2/2	21-pin Euro connector	40
M	R/D/D/D L/G/S/F	Audio phono jacks	40



Remote Commander

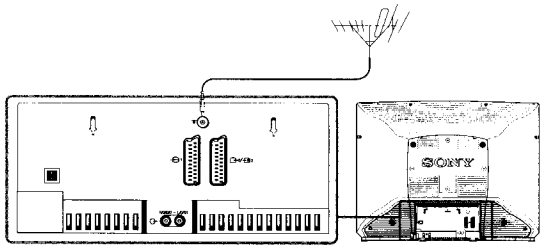
Reference and Symbol	Name	Refer to page
1	Muting on/off button	28
2	**VCR operation**	41
	VTR 123 MDP Video equipment selector	41
	◄◄ ► ►► ■ ❚❚ ● Video equipment operation buttons	41
	VIDEO ⏻, CH +/–	
3	On-screen display button	28
4	Time display button	28
5	Teletext button	28, 37
6	TV power on/TV mode button	28
7	No function on this set	
8	Freeze button	28
9	No function on this set	
10	No function on this set	
11	No function on this set	
12	No function on this set	
13	- / - - Double digit entering button	28
14	♪ Sound mode button	34
15	MENU Menu on/off button	29
16	+/- Volume control buttons	28
17	Joystick for Menu selection	29
	Press to confirm selection (OK function)	
18	TV ⏻ TV standby button	28
19	Output mode selector	40
	Teletext: Reveal button	37
20	Input mode selector	28
	Teletext: Freezing the subpage	37
21	Teletext: Favourite pages button	39
22	Screen format button	28
23	1, 2, ... 9, 0 Number buttons	28
24	C Direct channel entering button	28
25	Picture mode button	34
26	PROGR +/- Programme buttons	28
	Teletext: Page up/page down buttons	37



Step 1 Installation

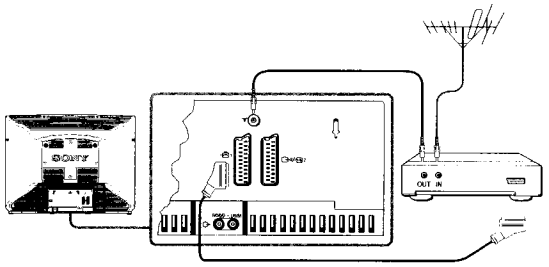
A Connecting the Aerial

(If you connect a VCR, skip to step B)
Insert the aerial plug of the supplied aerial cable tightly into the aerial socket ⅂ K.



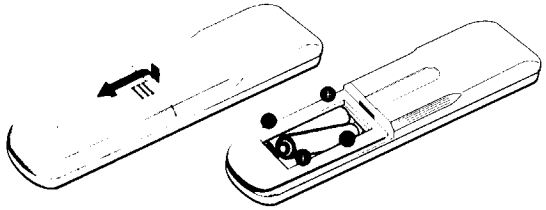
B Connecting a VCR

We recommend that you tune in the VCR signal to the programme position »0«.
Use the preset function »Manual Programme Preset« (page 29) to do this.



C Inserting the batteries into the Remote Commander

Insert the batteries checking the correct polarities.



! Respect your environment! Dispose of used batteries in an evironmental friendly way.

Step 2 Basic Presetting

A Choosing the Menu Language and the Country

Using this function you select the language of the menu screens. Also you select the country in which you will use the TV. In this way the channels of the selected country will automatically get the top positions during automatic presetting.

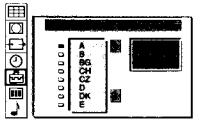
1 Connect the plug of the TV set to the main socket. Press the power switch ⏻ I on the TV. If the standby indicator ⏻ H on the TV is lit, press ▢ 6 or a number button 20 on the Remote Commander.

2 Press the MENU button 15 on the Remote Commander. The menu LANGUAGE appears.

3 Push the joystick 17 to blue or green to select the language. Press the joystick 17 to confirm your selection. The menu COUNTRY appears.

4 Push the joystick 17 to blue or green to select the country in which you wish to operate the TV. Press the joystick 17 to confirm the selection.

5 Press MENU 15 to restore the normal TV picture.



B Presetting Channels Automatically

With this function the TV automatically searches and stores up to 100 channels onto programme positions. If you prefer »Manual Presetting of channels« please refer to page 29 in Advanced Operation.

1 Press MENU 15.

2 Push the joystick 17 to blue or green to select the symbol on the menu screen, then push to yellow.

3 Push the joystick 17 to blue or green to select »Auto Programme«, then push to yellow. The menu AUTO PROGRAMME appears.

4 a) All items shown on the menu screen are as wanted: Press joystick 17 to select START. Now the automatic channel presetting starts from programme position 1.

or

4 b) You wish to change items as shown on the menu screen: Push the joystick 17 to blue or green. Push to yellow repeatedly until the desired item is highlighted.

Push the joystick 17 to blue or green to select the following possibilities:

ACI
(Automatic Channel Installation, depending on availability of service in your country)
on: fast channel presetting by special networks using the channel frequency (e.g. F055) TV-system and station label
off: ACI is not active, only ITP (Intelligent Tuner Preset)

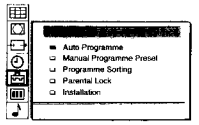
SYS (TV Broadcast System)
B/G for Western European Countries
D/K for Eastern European Countries

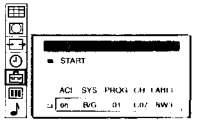
PROG (Programme Position)
Presetting automatically starts from position 1.

CH (channel)
C to start presetting with terrestrial channels
S to start presetting with cable channels

Press the joystick 17 as soon as the automatic presetting should start.

After presetting the normal TV picture reappears.





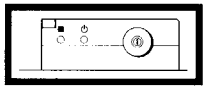
Joystick

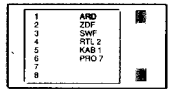
Step 3 TV operation

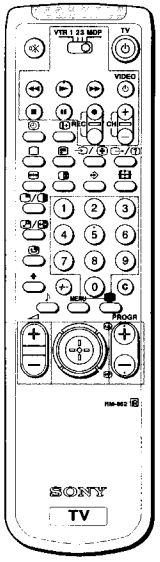
Using Direct Access Buttons

This section explains functions used while watching TV. Most operations are carried out using the Remote Commander (numbers in circles). All basic functions are also available on the TV set itself (letters in boxes).

To	Press
Switch on	• ⏻ I on TV.
Switch off temporarily (Standby mode)	• ⏻ ⑱. TV is now in standby mode and indicator ⏻ H lights up.
Switch on from standby mode	• ▭ ⑥, PROGR +/- ㉙ C or any number button ㉓.
Switch off completely	• ⏻ I on TV. ! To save energy, we recommend to switch off your TV completely when TV is not in use.
Select programmes	• PROGR +/- ㉙ C or number buttons ㉓. For a double digit number, press -/- - ⑬, then the two number buttons ㉓. E.g. for 24, press -/- - ⑬, then 2 and 4.
Display a programme table	• The joystick ⑰. Push the joystick ⑰ to blue or green to select a programme, then press the joystick ⑰ to confirm.
Display on screen indications	• ⓘ ③. Press again to make the indications disappear.
Adjust the volume	• ◿ + or - ⑲ F.
Mute the sound	• 🔇 ①. Press again to restore the sound.
Select the Sports mode	• Push the joystick ⑰ to yellow.
Display the time (only available when teletext is broadcast)	• ⏲ ④. Press again to make the display disappear.
Tune in a channel temporarily	• »C« ㉒ once for terrestrial channels, twice for cable channels. The indication »C« or »S« for cable channels appears. Enter the channel number with two digits, e.g. for 4, press 0, then 4.
View the input of a connected device (see also page 40)	• ⇥ ⑳ E repeatedly until the desired input signal appears. Press ▭ ⑥ to restore the normal TV picture.
View teletext (see also page 37)	• 🖹 ⑤ to switch on. Input a page number, using the number buttons ㉓ (e.g. for page 125, press 1, 2 and 5). ▭ ⑥ to switch off.
Change the screen mode (see also page 36)	• ▭ ㉒ repeatedly. The mode changes as follows: Auto Wide ⟶ Smart ⟶ Zoom ⟶ Wide ⟶ 4:3 ⟶ 14:9
Freeze the picture	• ⏸ ⑧. Press again to restore the normal TV picture.
Reset picture settings to factory levels	• →•← D.







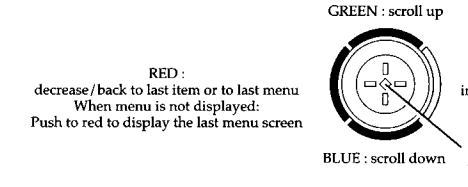
Using the Menu System

Use the following buttons on the Remote Commander to operate the Menu system:

1 Press MENU button ⑮ to switch menu on or off.

MENU

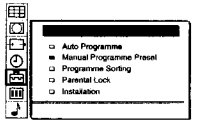
2 Use the joystick ⑰ as follows:


GREEN : scroll up
RED :
decrease/back to last item or to last menu
When menu is not displayed:
Push to red to display the last menu screen
YELLOW :
increase/forward
to next item
BLUE : scroll down
Joystick: Press at its neutral position to confirm selection or store

Advanced Presetting

Presetting Channels Manually

Using this function you can preset channels one by one to different programme positions. It is also convenient to allocate programme numbers to video input sources.

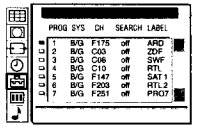


1 Press MENU ⑮.

2 Push joystick ⑰ to blue or green to select the symbol 🖃 on the menu screen. Push to yellow to confirm the selection.

3 Push to blue or green to select »Manual Programme Preset«. Push to yellow to confirm the selection.

4 Push to blue or green to select the programme position (PROG) to which you want to preset a channel. Push to yellow to confirm.


PROG SYS CH SEARCH LABEL
1 B/G F175 off ARD
2 B/G C03 off ZDF
3 B/G C06 off SWF
4 B/G C10 off RTL
5 B/G F147 off SAT 1
6 B/G F203 off RTL 2
7 B/G F251 off PRO7

5 Push to blue or green to select the TV broadcast system (SYS) (B/G for western European countries, D/K for eastern European countries) or a video input source (EXT). Push to yellow to confirm.

6 Push to blue or green to select »C« (for terrestrial channels), »S« (for cable channels) or »F« (for channel frequency). Push to yellow to confirm.

There are two possibilities to preset channels manually:

a) You know the channel number or channel frequency.
Please use method »Direct input«.

or

b) You don't know the channel number or frequency.
Please use method »Search«.

continued >>>

Advanced Presetting

7a) Direct Input

For channel numbers you need to input a two digit number, for the frequency a three digit number.

- Push to blue or green to select the first digit of the channel number or frequency. Push to yellow to confirm.
- Push to blue or green to select the second digit of the number or frequency. Push to yellow to confirm. In case of the channel number the search starts.
- Push to blue or green to select the third digit of the frequency number. Push to yellow to start the search of the frequency.
- To continue search for another channel: Push to blue or green.
- To store the selected channel: Press the joystick ⓱.
- Repeat steps 4 to 7a) to preset other channels.

7b) Search

- Push repeatedly to yellow until a blue and a green arrow appear in the section SEARCH.
- Push to blue or green to search for the next available channel.
- To continue search for another channel: Push to blue or green.
- To store the selected channel: Press the joystick ⓱.
- Repeat steps 4 to 7b) to preset other channels.

Joystick

Captioning a Station Name

Channels are usually automatically labelled during presetting. You can, however, individually name a channel or a video source using up to five characters.

1 Press MENU ⓯.

2 Push joystick ⓱ to blue or green to select the symbol 🧰 on the menu screen. Push to yellow to confirm.

3 Push to blue or green to select »Manual Programme Preset«. Push to yellow to confirm.

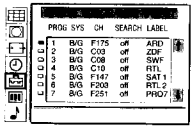
4 Push to blue or green to select the programme position with the channel you want to label. Push to yellow repeatedly until the first element of the position LABEL is highlighted.

5 Push to blue or green to select a letter or a number (select »-« for a blank). Push to yellow to confirm. Select the other four characters in the same way.

6 After selecting all characters, press the joystick ⓱.

7 Repeat steps 4 to 6 to label other channels or video sources.

8 Press MENU ⓯ to restore the normal TV picture.


PROG SYS CH SEARCH LABEL
1 B/G F175 off ARD
2 B/G C03 off ZDF
3 B/G C08 off SWF
4 B/G C10 off RTL
5 B/G F147 off SAT 1
6 B/G F203 off RTL 2
7 B/G F251 off PRO7

Skipping Programme Positions

This function enables you to skip unused programme positions when selecting them with the PROGR +/- buttons. However, by using the number buttons you can still select the skipped programme position.

1 Press MENU ⓯.

2 Push joystick ⓱ to blue or green to select the symbol 🧰 on the menu screen. Push to yellow to confirm.

3 Push to blue or green to select »Manual Programme Preset«. Push to yellow to confirm.

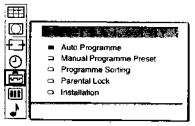
4 Push to blue or green to select the programme position you want to skip. Push to yellow to confirm.

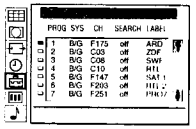
5 Push to blue or green to select »---« in the position SYS (system). Press the joystick ⓱ to confirm.

6 Repeat steps 4 and 5 to skip other programme positions.

7 Press MENU ⓯ to restore the normal TV picture.

Joystick




PROG SYS CH SEARCH LABEL
1 B/G F175 off ARD
2 B/G C03 off ZDF
3 B/G C08 off SWF
4 B/G C10 off RTL
5 B/G F147 off SAT 1
6 B/G F203 off RTL 2
7 B/G F251 off PRO7

Sorting Programme Positions

This function enables you to sort the programme positions to a preferable order.

1 Press MENU ⓯.

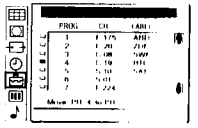
2 Push joystick ⓱ to blue or green to select the symbol 🧰 on the menu screen. Push to yellow to confirm.

3 Push to blue or green to select »Programme Sorting«. Push to yellow to confirm.

4 Push to blue or green to select the programme position of the channel you want to exchange. Press joystick ⓱ to confirm.

5 Push to blue or green to select the programme position of the second channel. Press joystick ⓱ to confirm. Now the two programme positions are swapped and sorted.

6 Repeat steps 4 and 5 to sort other programme positions.



Using Parental Lock

This function enables you to prevent children watching undesirable broadcasts.

1 Press MENU ⓯.

2 Push joystick ⓱ to blue or green to select the symbol 🧰 on the menu screen. Push to yellow to confirm.

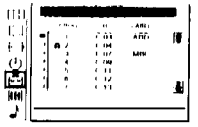
3 Push to green or blue to select »Parental Lock«. Push to yellow to confirm.

4 Push to green or blue to select the channel you want to block. Press the joystick ⓱ to confirm. The symbol 🔒 appears before the programme position to indicate that this channel is now blocked.

5 Repeat step 4 to block other channels.

6 Press MENU ⓯ to restore the normal TV picture.

❗ To unblock: Select the channel to unblock in the menu »Parental Lock«. Press the joystick ⓱. The symbol 🔒 disappears.



Using »Further Programme Preset«

Joystick

Using the menu »Further Programme Preset« you can

a) individually adjust and store the volume level of each channel (Volume offset).

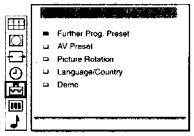
b) in case of picture distortions use manual fine tuning to obtain a better picture quality. The factory setting is »on« for AFT (Automatic Fine Tuning).

1 Press MENU ⓯.

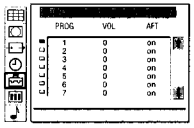
2 Push joystick ⓱ to blue or green to select the symbol 🧰 on the menu screen. Push to yellow to confirm.

3 Push to blue or green to select »Installation«. Push to yellow to confirm.

4 Push to blue or green to select »Further Programme Preset«. Push to yellow to confirm.



5 Push to blue or green to select the programme position you want. Push to yellow repeatedly to select:
a) VOL (Volume Offset) or b) AFT (Automatic Fine Tuning). The selected item changes colour.



6a) VOL
Push to blue or green to adjust the volume for the selected programme position within a range of -7 to +7. Press the joystick ⓱ to confirm. Repeat step 6 to set the volume level for other programme positions.

b) AFT
Push to blue or green to fine-tune the channel within a range of -15 to +15. Press the joystick ⓱ to confirm. Repeat step 6 to fine-tune other channels.

7 Press MENU ⓯ to restore the normal TV picture.

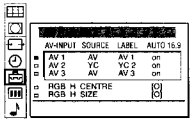
Using »AV Preset«

Using this function you can preset the desired input source (e.g. 🧰1, RGB signal) to the respective AV input (AV1). In this way a connected VCR switches automatically to the RGB signal. Also you can label the input sources.

1 Press MENU ⓯.

2 Push joystick ⓱ to blue or green to select the symbol 🧰 on the menu screen. Push to yellow to confirm.

3 Push to blue or green to select »Installation«. Push to yellow. Push to blue or green to select »AV Preset«. Push to yellow to confirm.



4 Push to blue or green to select the desired AV input. Push to yellow to confirm.

5 Push to blue or green to select the desired source. Push to yellow to confirm. For the respective AV inputs you have the following choice:
AV1: RGB or AV
AV2: YC2 or AV
AV3: YC3 or AV

6 To label a source: Push to blue or green to select the first character (letter or number, »-« for a blank). Push to yellow to confirm. Select the other four characters in the same way.

7 For automatic format selection (Auto 16:9):
Push to blue or green to select »On« for the AV input.

8 Press the joystick ⓱ to store.

9 Repeat steps 4 to 8 for the other AV inputs.

10 For RGB input source only: Push to blue or green to select RGB H CENTRE.
- Push to yellow to confirm.
- Push to blue or green to adjust the centre of the picture in a range of –5 to +5. Press the joystick ⓱ to store.
- Repeat step 10 to adjust RGB H SIZE.

11 Press MENU ⓯ to restore the normal TV picture.

Adjusting the Picture Rotation

Joystick

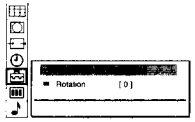
If, due to the earth magnetism, the picture slants, you can use this function to readjust the picture.

1 Press MENU ⓯.

2 Push joystick ⓱ to blue or green to select the symbol 🧰 on the menu screen. Push to yellow to confirm.

3 Push to blue or green to select »Installation«. Push to yellow to confirm.

4 Push to blue or green to select »Picture Rotation«. Push to yellow to confirm.



5 Push to yellow. Push to blue or green to adjust the picture rotation. The adjusting range is - 4 to + 4. Press the joystick ⓱ to confirm.

6 Press MENU ⓯ to restore the normal TV picture.

Advanced TV operation

Adjusting the Picture and Sound

Although the picture and sound are adjusted at the factory, you can adjust them to suit your own taste.

1 Press ■ ⑯ (for Picture) or ♪ ⑯ (for Sound)
or
Press MENU ⑮.
Push joystick ⑰ to blue or green to select ▦ for Picture Control or ♪ for Sound Control. Push to yellow to confirm. The menu PICTURE CONTROL or SOUND CONTROL appears.

2 Push to blue or green to select the desired item. Push to yellow to confirm.

3 Push to red or yellow to adjust the selected item. Press the joystick ⑰ to confirm. For the effect of each control, see the following tables.

4 Repeat steps 2 and 3 to adjust other items.

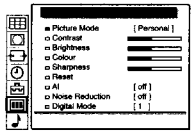
5 Press MENU ⑮ to restore the normal TV picture.

Picture Control

Item	Effect
Picture Mode	• Personal → Economy (energy saving setting) → Live → Sports → Movie → Game
Contrast	• Less ——|—— More
Brightness*	• Darker ——|—— Brighter
Colour*	• Less ——|—— More
Hue**	• Greenish ——|—— Reddish
Sharpness*	• Softer ——|—— Sharper
Reset	• Resets picture to the factory preset levels
AI	• Off: Normal On: Automatic optimization of contrast level according to TV signal
Noise Reduction	• Off: Normal On: Reduction of picture noise in case of weak signals
Digital Mode	• 1: Normal 2: LFR (Line Flicker Reduction) off

* Only if »Personal« or »Economy« is selected in »Picture Mode«.
** Available for NTSC colour system only.

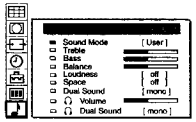
Joystick



Sound Control

Item	Effect
Sound Mode	• Choice between different sound effects User → Sports → Pop → Jazz → Rock
Treble*	• Less ——|—— More
Bass*	• Less ——|—— More
Balance	• More left ——|—— More right
Loudness*	• Off: normal On: for music broadcasts
Space	• Off: normal On: special acoustic effect
Dual Sound	• A: channel 1 or B: channel 2 Stereo → Mono
Headphones	
∩ Volume	• Less ——|—— More
∩ Dual Sound	• A: channel 1 or B: channel 2 Stereo → Mono

* Only if »User« is selected in »Sound Mode«



Using the Sleep Timer

This function enables you to select a time period after which the TV automatically switches into standby mode.

1 Press MENU ⑮.

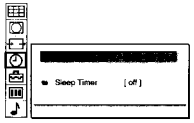
2 Push joystick ⑰ to blue or green to select the symbol ◴ on the menu screen. Push to yellow to confirm.

3 Push to yellow. Push to blue or green to select the time.
OFF → 10 min → 20 min .....80 min → 90 min.
Press the joystick ⑰ to confirm.

4 Press MENU ⑮ to restore the normal TV picture.

! One minute before the TV switches into standby mode, a message is displayed on the screen.

Joystick



Using »Multi PIP«

Using »Multi PIP« you can scan 12 successive TV channels on the screen (Programme Catching) or display 11 successive freeze pictures on the screen (Photo Mode).

1 Press MENU.

2 Push joystick to blue or green to select the symbol on the menu screen. Push to yellow to confirm.

a) Programme Catching

Push to blue or green to select »Programme Catching«. Press the joystick. Now a scan of 12 successive programmes (11 still pictures, 1 live picture where the cursor is positioned) is displayed on the screen starting from the programme tuned in. Pushing the joystick to blue, green, red or yellow you can move the cursor in all directions and update the still pictures. When selecting a programme position lower or higher than the 12 displayed ones the programme scanning starts again. Press MENU to restore the normal TV picture.

Selecting a programme using Programme Catching:

Push the joystick to blue, green, red or yellow to select the programme position you want, then press the joystick. Now the selected programme appears and you are back in the normal TV mode.

b) Photo mode

Push to blue or green to select »Photo mode«. Press the joystick. Now the main picture is displayed as a succession of 11 still pictures and a 12th picture, which is live. Push to blue or green to start the photo mode again. Press the joystick to restore the normal TV picture.

Operating Screen Mode

Using Screen Mode you can change the aspect ration of the screen for wide screen effects, or reproduce the main picture image by image (Strobe function).

1 Press MENU.

2 Push joystick to blue or green to select the symbol on the menu screen. Push to yellow to confirm.

3 Push to blue or green to select »Screen Mode«. Push to yellow to confirm. Push to blue or green to select one of the following modes:

- Smart - imitation of wide screen effect (16:9) for 4:3 broadcasts.
- Zoom - imitation of wide screen effect (16:9) for movies broadcast in cinemascopic format.
- Wide - for 16:9 broadcasts
- 4:3 - conventional 4:3 picture
- 14:9
- AutoWide - automatic selection of the optimum screen ratio (e.g. 4:3 picture automatically changes to Smart mode, 16:9 picture changes to Zoom mode)

Press the joystick to confirm the selection.

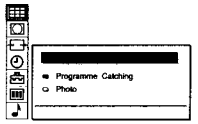
4 Only in Zoom/Auto Wide Mode: Changing the Screen position
In Zoom mode parts ot the top and bottom of the picture are cut off. Using »Screen position« you can move the screen up- or downwards in order to see the cut-off parts (e.g. to read subtitles). Push to blue or green to select »Screen position«. Push to yellow to confirm.
Push to blue or green to adjust the screen position (-10 to +10 or -5 to +5). Press the joystick to confirm.

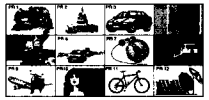
5 Strobe Mode
Push to blue or green to select »Strobe«. Push to yellow to confirm. The TV picture is now displayed image by image, creating a slow motion effect. Push to blue or green to select the speed of the motion. Press the joystick to restore the normal TV picture.

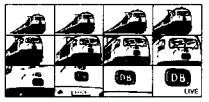
6 Auto 16:9
Push to blue or green to select »Auto 16:9«. Push to yellow to confirm.
Push to blue or green to select »On« for automatic selection of format or »Off« for normal mode.
Press joystick to confirm.

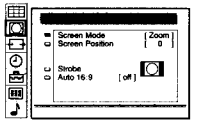
7 Press MENU to restore the normal TV picture.

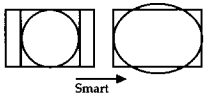
Joystick

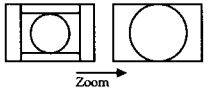


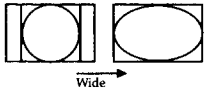


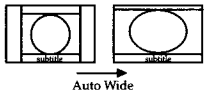












Teletext

Most TV channels broadcast information via teletext. The index page of the broadcaster (usually page 100) informs you about how to use the service. Make sure to use a TV channel with a strong signal, otherwise Teletext errors may occur.

Direct Access Function

Switching Teletext on and off

1 Select the TV channel which carries the teletext service you want to view.

2 Press 5 once to get Teletext only.
Press 5 twice times for Mix mode. The normal TV screen and the Teletext screen are overlapped.

3 Press 0 to switch Teletext off.

Selecting a Teletext page

Direct Page Selection
Use the number buttons to input three digits of the page number.
If you have made a mistake: Type in any three digits, then reenter the correct page number.

Page Catching
1 Select a teletext page with page numbers (e.g. index page).

2 Press the joystick. »Page Catching« is displayed at the top of the page.
Push joystick to blue or green to select the page you want. Press the joystick.
The requested page is displayed after some seconds.

Joystick

Accessing the next or preceding page

Press (Page +) or (Page -).

Freezing a teletext subpage

Press . The symbol is displayed.
Press 5 to resume normal teletext reception.

Revealing hidden information (e.g. for a quiz)

Press . Press again to cancel.

Using Fastext

(only available, if the TV station broadcasts Fastext signals)

With Fastext you can access pages with one key stroke. When Fastext is broadcast, a colour-coded menu appears at the bottom of the screen. The colours of this menu correspond to the red, green, yellow and blue marks on the Remote Commander. Push the joystick to the colour mark which corresponds to the colour-coded menu. The page is displayed after some seconds.

continued >>>

User Page Bank System

You can store up to 6 of your favourite teletext pages per Teletext service. In this way you have quick access to the pages you frequently use.

Storing pages

1 Press ▤ ⑤ to switch Teletext on. Press MENU ⑮.

2 Push joystick ⑰ to blue or green to select »Preset User Pages«. Push to yellow to confirm.

3 Push to blue or green to select the bank (from A to E) you want. Push to yellow to confirm.

4 Push to blue or green to select the three digits of your first favourite page. Push to yellow after each digit. Push to yellow to confirm.

5 Repeat step 4 for the other 5 favourite pages. If you do not want to preset all 6 page numbers push to yellow without inserting any number. After finishing the presetting, press the joystick ⑰.

6 Push to blue or green to select »Allocate Bank«. Push to yellow to confirm.

7 Push to blue or green to select the programme position of the channel which carries the teletext service for which you have selected your favourite pages. Push to yellow to confirm.

8 Push to blue or green to select the bank from step 3. Press the joystick ⑰ to confirm. Push to red.

9 Repeat steps 3 to 8 for the other 4 banks available.

Displaying User Pages

1 Press MENU ⑮.

2 Push joystick ⑰ to blue or green to select »User Pages«. Push to yellow to confirm.

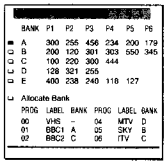
3 Push to blue or green to select the page you want. Press the joystick ⑰. The page is displayed after some seconds.

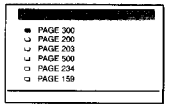
or

1 Press ✣ ㉑.

2 Push joystick ⑰ to blue or green to select the page you want. Press the joystick ⑰.

Joystick





Optional Equipment

Connecting Optional Equipment

You can connect a wide range of optional equipment to your TV. Refer to the illustrations on the back lap page of this Instruction Manual.

Symbol	Acceptable input signals	Available output signals
1	Normal audio/video and RGB	Audio/video from TV tuner
2/S2	Normal audio/video and S video	Audio/video from selected source
3, 3	Normal audio/video and S video	No output
	No inputs	Audio from selected source

About S video input
Video signals may be separated into Y (luminance) and C (chrominance) signals. Separating the two signals prevents interference and thus improves the picture quality.

Tips:
- If the picture or sound is distorted, move the VCR away from the TV.
- When connecting a monaural VCR, connect only the white jack to both the TV and VCR.

Selecting Input and Output Signals

a) Direct Access Buttons

Selecting the Input
Press ⑳ E repeatedly to select one of the following input modes:

Symbol on the screen	Input signals	
1	Audio/video through Euro AV connector	J
	RGB through Euro AV connector	J
2	Audio/video through Euro AV connector	L
S2	S video through Euro AV connector	L
3	Audio/video through the phono jacks	C
S3	S video through the 4 pin DIN	B

Press ⑥ to restore the normal TV picture.

Selecting the Output from Euro AV connector 2/S2 L
Press ⑱ repeatedly to select one of the following output sources for the connector 2/S2 L:

Symbol on the screen	2/S2 L connector output signal	
1	Audio/video from Euro AV connector	J
2	Audio/video from Euro AV connector	L
2 S	Audio/video from Euro AV connector	L
3	Audio/video from the phono jacks	C
3 S	Audio/video from the 4 pin DIN	B
TV	Audio/video from the aerial terminal	K

Optional Equipment

b) Using the Menu »Video Connection«

1 Press MENU ⓯.

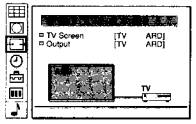
2 Push joystick ⓱ to blue or green to select the symbol ⊟ on the menu screen. Push to yellow to confirm.

3 Push to blue or green to select »TV screen« (input source for TV-screen), or »Output« (output source for ⊡ 2/⊡ 2 L). Push to yellow to confirm.
You can select between the following sources:
• TV: TV-tuner • YC: S video signal • AV: Audio/Video

TV screen: TV, AV1, RGB, AV2, YC2, AV3, YC3
Output: TV, AV1, AV2, YC2, AV3, YC3

4 Push to blue or green to select the desired source. Press joystick ⓱ to store.

5 Press MENU ⓯ to restore the normal TV picture.



Joystick

Remote Control of other Sony Equipment

Using the buttons ❷ on the Remote Commander you can control other Sony equipment.

1 Set the selector VTR 1 2 3 MDP according to the equipment you want to control.
VTR 1: Beta VCR
VTR 2: 8mm VCR
VTR3: VHS VCR
MDP: Video Disk Player

2 Use the buttons ❷ on the Remote Commander to operate the equipment.

Tips
• If your video equipment has a COMMAND MODE selector, set this selector to the same position as the VTR 1 2 3 MDP selector on the TV Remote Commander.

• If the equipment does not have a certain function, the corresponding button on the Remote Commander does not work.

Troubleshooting

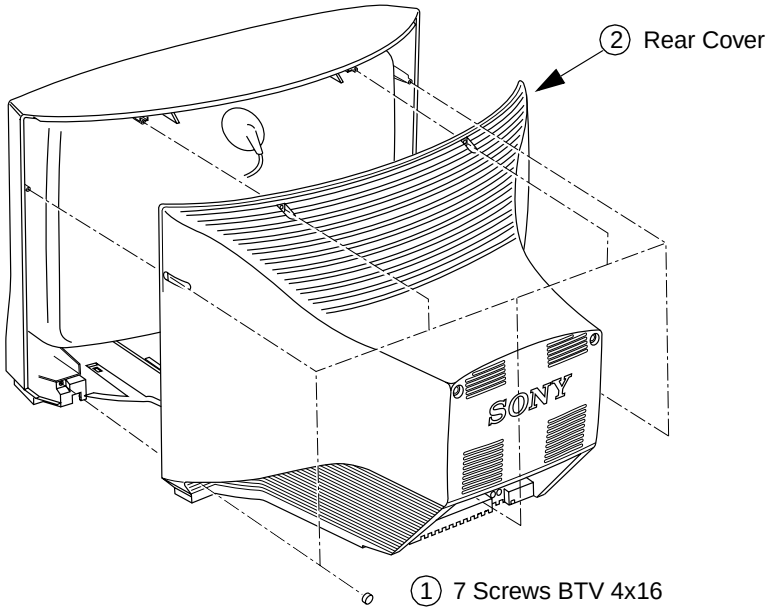
Here are some simple solutions to problems which may affect the picture and sound.

Problem	Solution
No picture (screen is dark), no sound	• Plug the TV in. • Press ⏻ I on the TV. (If ⏻ indicator H is on, press ▢ 6 or a programme number ❷ on the Remote Commander.) • Check the aerial connection. • Check if the selected video source is on. • Turn the TV off for 3 or 4 seconds and then turn it on again using ⏻ I.
Poor or no picture (screen is dark), but good sound	• Press ● ❷ to enter the PICTURE CONTROL menu and adjust »Brightness«, »Contrast« and »Colour«.
Poor picture quality when watching an RGB video source	• Press ⊡ ⓴ repeatedly to select ⊡.
Good picture but poor or no sound	• Press ◿ +⓰. • If 🔇 is displayed on the screen, press 🔇 ❶.
No colour for colour programmes	• Press ● ❷ to enter the PICTURE CONTROL menu, select RESET, then press Joystick ⓱.
Remote Commander does not function.	• Replace batteries.

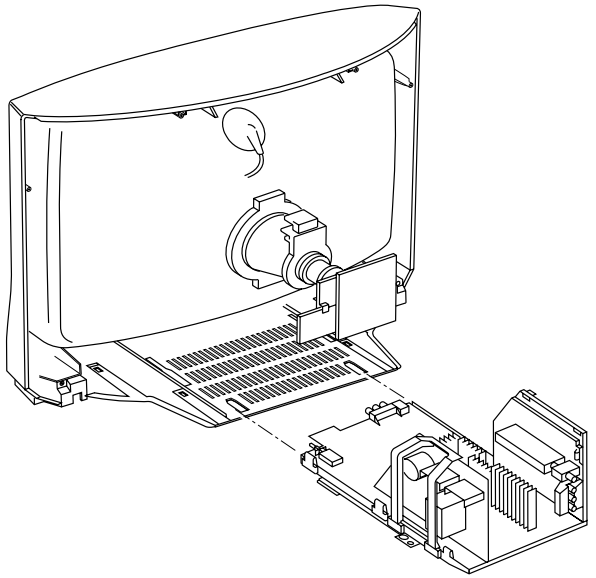
If you continue to have problems, have your TV serviced by qualified personnel. Never open the casing yourself.

SECTION 2
DISASSEMBLY

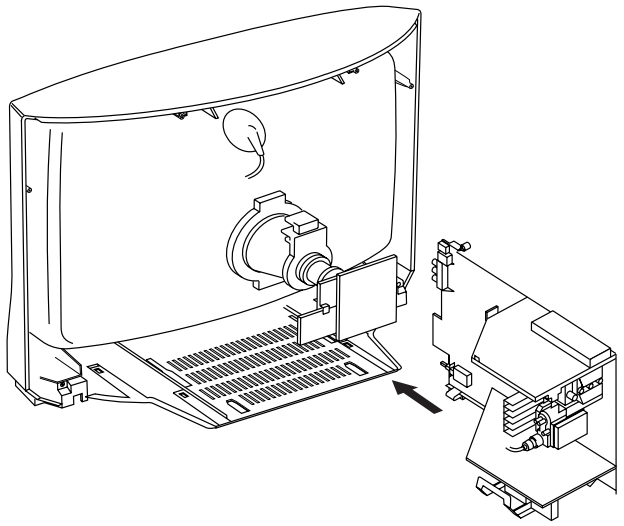
2-1. REAR COVER REMOVAL



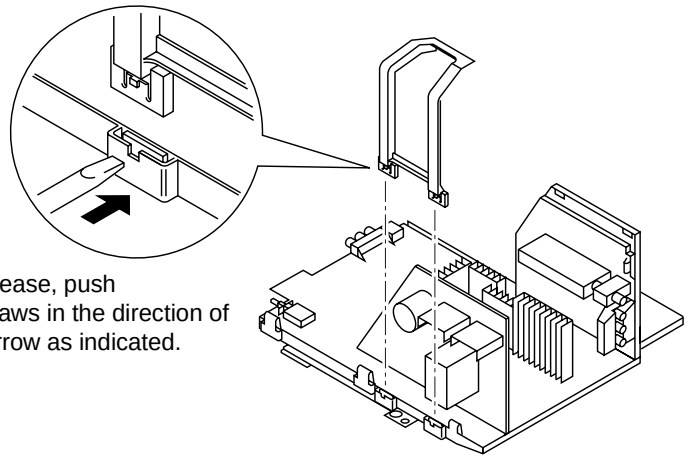
2-2. CHASSIS ASSY REMOVAL



2-3. SERVICE POSITION

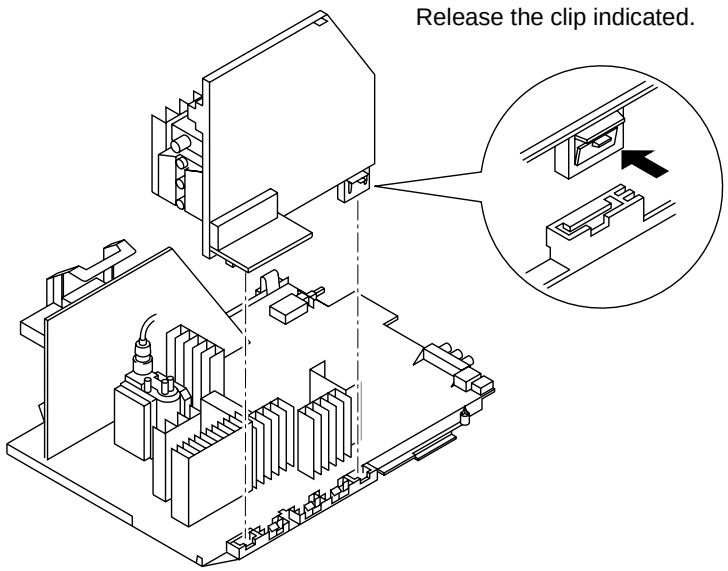


2-4. G BOARD REMOVAL

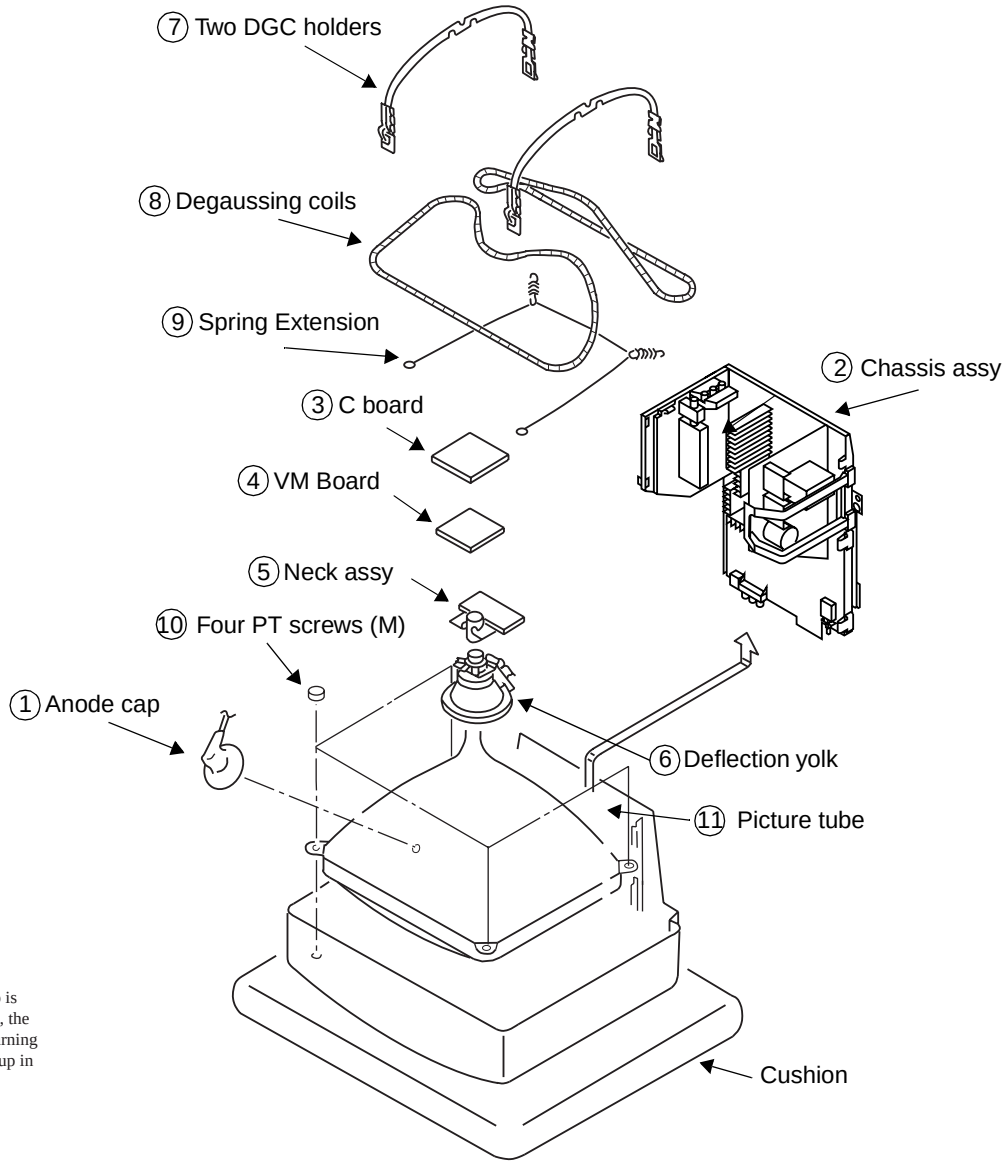


To release, push
the claws in the direction of
the arrow as indicated.

2-5. A BOARD REMOVAL



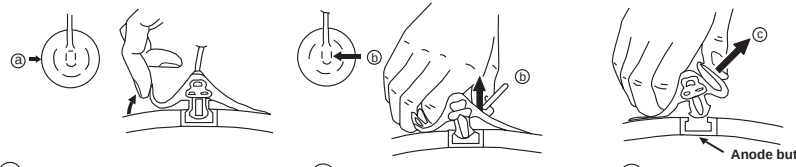
2-6. PICTURE TUBE REMOVAL



• REMOVAL OF ANODE-CAP

Note : Short circuit the anode of the picture tube and the anode cap to the metal chassis, CRT shield or carbon paint on the CRT, after removing the anode.

*** REMOVING PROCEDURES.**



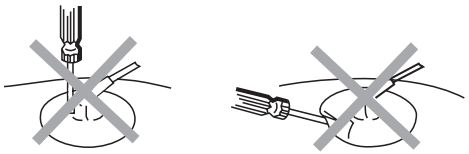
① Turn up one side of the rubber cap in the direction indicated by the arrow ⓐ

② Using a thumb pull up the rubber cap firmly in the direction indicated by the arrow ⓑ

③ When one side of the rubber cap is separated from the anode button, the anode-cap can be removed by turning up the rubber cap and pulling it up in the direction of the arrow ⓒ

• HOW TO HANDLE THE ANODE-CAP

① To prevent damaging the surface of the anode-cap do not use sharp materials.
② Do not apply too great a pressure on the rubber, as this may cause damage to the anode connector.
③ A metal fitting called a shatter hook terminal is fitted inside the rubber cap. Do not turn the rubber foot over excessively this may cause damage if the shatter hook sticks out.



REMOVAL AND REPLACEMENT OF THE MAIN-BRACKET BOTTOM PLATES.

For safety reasons, on no account should the plates be removed and not refitted after servicing.

(1) REMOVING THE PLATES

In the event of servicing being required to the solder side of the D Board printed circuit, the bottom plates fitted to the main chassis bracket require to be removed. This is performed by cutting the gates with a sharp wire cutter at the locations shown and indicated by arrows.

Note : There are 5 plates fitted to the main bracket and secured by 4 or 6 gates. Only remove the necessary plate to gain access to the circuit board.

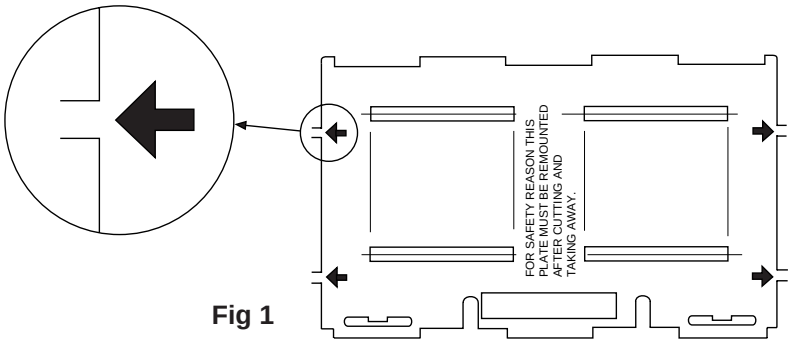


Fig 1

(2) REFITTING THE PLATES

Because the plates differ in size it is important that the correct plates are refitted in their original location.
The plates are identified by markings A-B-C-D-E on their top side.

1. Identify the plate by locating its marking.
2. Turn the plate over noting where the marking is located.
3. Locate the corresponding marking indicated on the main chassis bracket. See Fig 2.
4. Refit the plate as indicated in Fig 3 with the markings located next to each other.

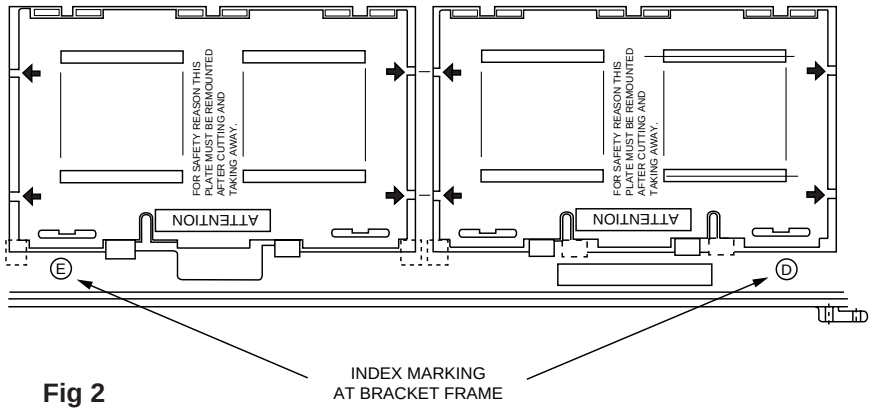


Fig 2

In the event of the plates requiring to be removed at a later stage, this can be achieved by inserting a screwdriver in the snap-recess indicated as in Fig 4 and lifting out.

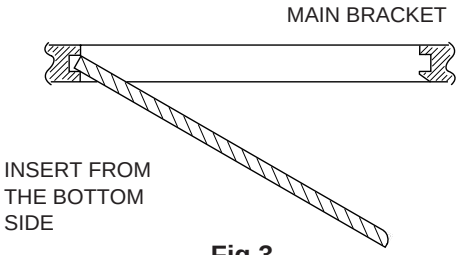


Fig 3

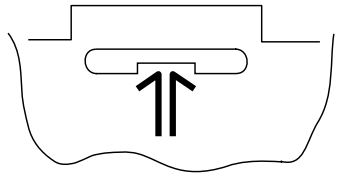


Fig 4

SECTION 3
SET-UP ADJUSTMENTS

- When complete readjustment is necessary or a new picture tube is installed, carry out the following adjustments.
- Unless there are specific instructions to the contrary, carry out these adjustments with the rated power supply.
- Unless there are specific instructions to the contrary, set the controls and switches to the following settings :

Contrast ..... normal

Brightness ..... normal

Carry out the following adjustments in this order :

3-1. Beam Landing
3-2. Convergence
3-3. Focus
3-4. White balance

Note : Test equipment required
1. Color bar/pattern generator
2. Degausser
3. Vector scope

3-1. BEAM LANDING

Preparation:

1. In order to reduce the influence of geomagnetism on the set's picture tube, face it in an easterly or westerly direction.
2. Switch on the set's power and degauss with the degausser.

(1) Adjustment of Correction Magnet for Y-Splitting Axis

1. Input a crosshatch signal from the pattern generator.
2. Set the Picture control to minimum and confirm that the Brightness control is set to normal.
3. Position the neck assembly as indicated in Fig.3-2.
4. Move the deflection yolk as far forward as is possible.
5. Adjust the upper and lower pin symmetrically by opening or closing the Y-splitting axis correction magnets located on the neck assembly.
6. Return the deflection yolk to its original position.

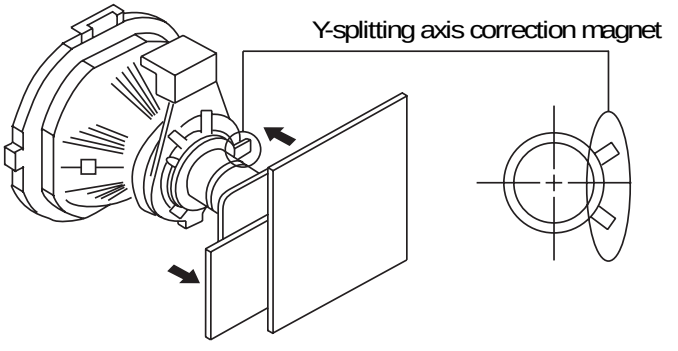


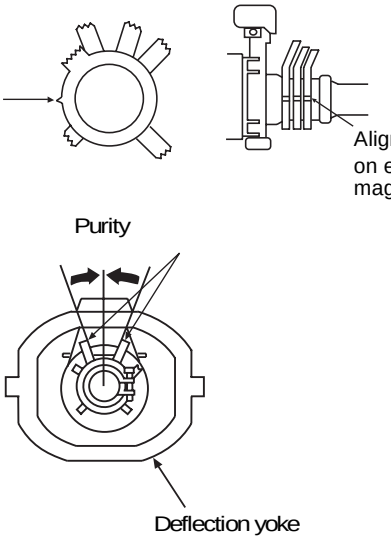
Fig.3-1

(2) Landing

Note : Before carrying out the following adjustments adjust the magnets as indicated below [See Fig.3-3].

1. Input an all-white signal from the pattern generator. Maximize the picture setting and adjust the Brightness setting.
2. Rough-adjust the focus and horizontal convergence.
3. Loosen the deflection yolk screws and align the purity adjustment knob to its central position. [See Fig.3-1].
4. Switch from the all-white pattern to an all-green pattern.
5. Move the deflection yolk backwards and adjust with the purity magnet so that the green is at the centre and it aligns symmetrically. [See Fig.3-4].
6. Move the deflection yolk forward and adjust so that the entire screen becomes green.
7. Switch the raster signal to red, then to blue and verify the landing condition.
8. When the position of the deflection yolk has been determined, fasten the deflection yolk with the screw.
9. If the beam does not land correctly in all the corners of the screen, use magnets to correct it. [See Fig.3-5].

Fig.3-3



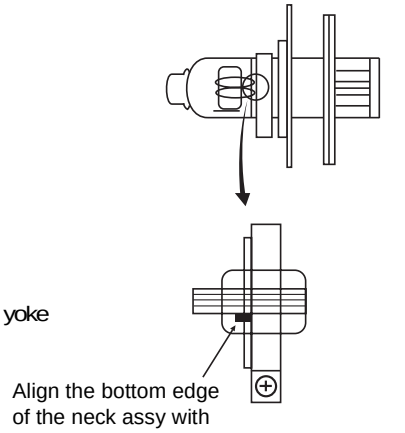


Fig.3-2

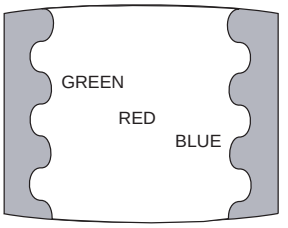


Fig. 3-4

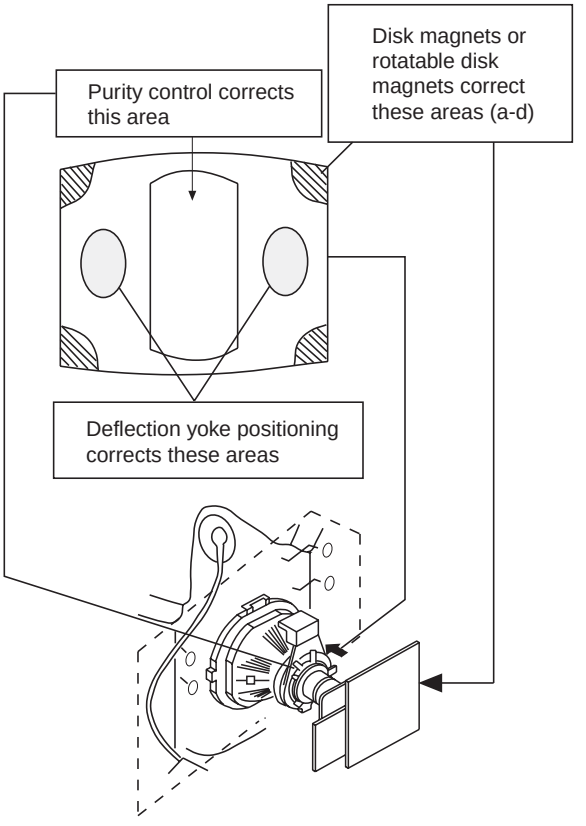
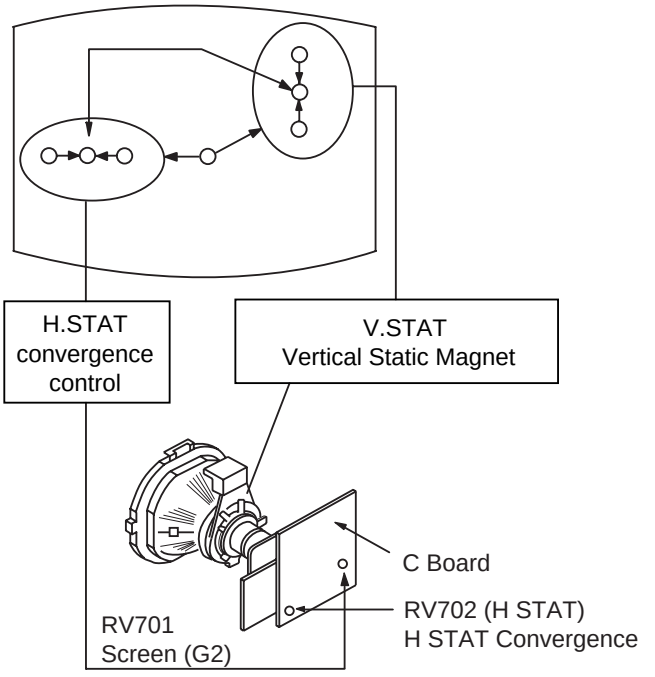

Disk magnets or rotatable disk magnets correct these areas (a-d)
Purity control corrects this area
Deflection yoke positioning corrects these areas

Fig. 3-5

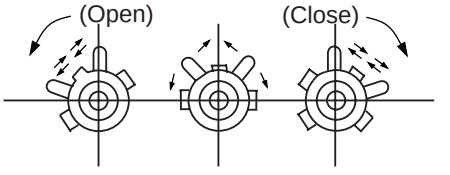
3-2. CONVERGENCE

(1) Screen centre convergence
[Static convergence]

1. Input a dot signal from the pattern generator.
   Normalize the picture setting.
2. [Moving horizontally], adjust the H.STAT control so that the horizontal red, green and blue dots coincide at the centre of the screen.
3. [Moving vertically], adjust the V.STAT magnet so that the vertical red, green and blue dots coincide at the centre of the screen.

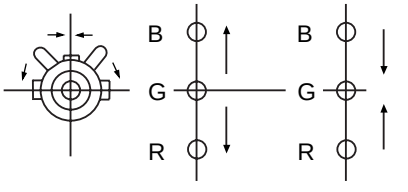


- If the horizontal dots are unable to coincide with the variable range of the H.STAT convergence, adjust together with the V.STAT convergence while tracking.
  [Adjust the convergence by tilting the V.STAT convergence or by opening and closing the V.STAT convergence.]

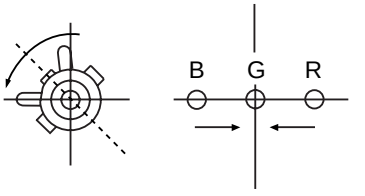


4. Movement of the red, green and blue dots by tilting the V.STAT magnet and by opening or closing the V.STAT magnet.

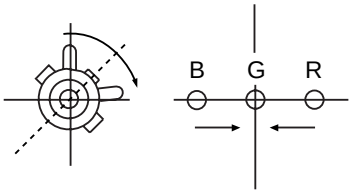
a). By opening or closing the V.STAT magnet, the red, green and blue dots move as indicated below.



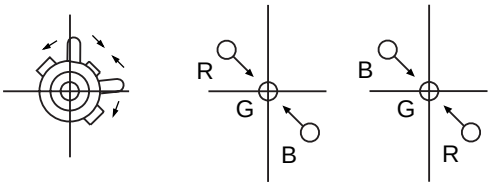
b). By rotating the V.STAT magnet counter clockwise, the red, green and blue dots move as indicated below.



c). By rotating the V.STAT magnet clockwise, the red, green and blue dots move in the direction indicated below.



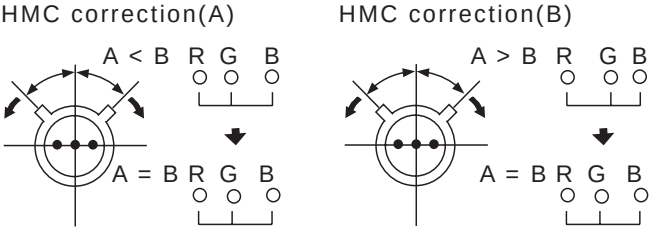
d). By opening or closing the V.STAT magnet, the red, green and blue dots move in the direction indicated below.



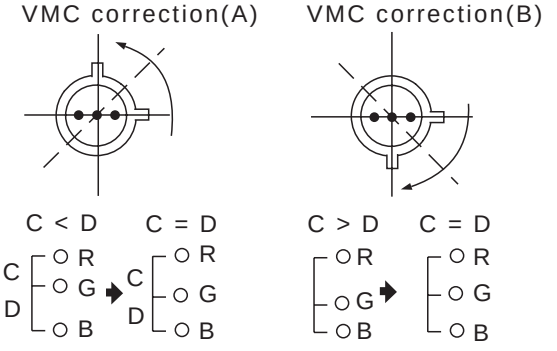
Note : If the blue dot does not coincide with the red and green points correct the points by using the BMC [Hexapole] magnet.

e). Correction for HMC [horizontal mis-convergence] and VMC [vertical mis-convergence] by using the BMC [Hexapole] magnet.

5. HMC correction by BMC [Hexapole] magnet and movement of the electron beam.



a). VMC correction by BMC [Hexapole] magnet and movement of the electron beam.



Layout of each control

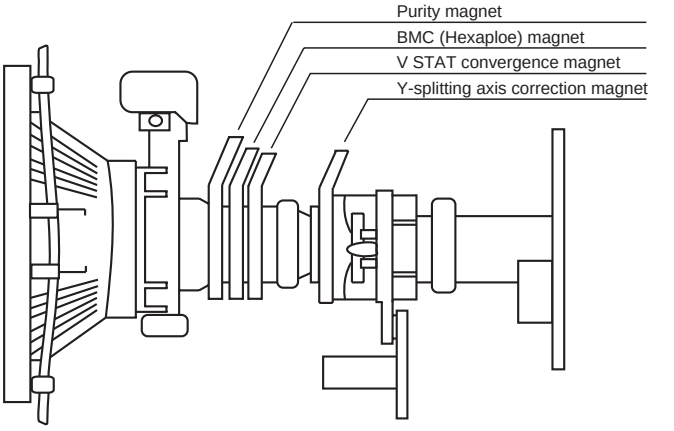
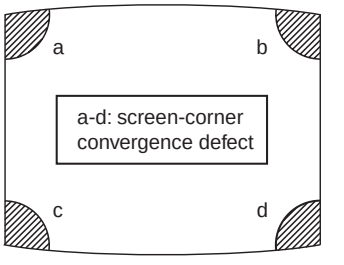
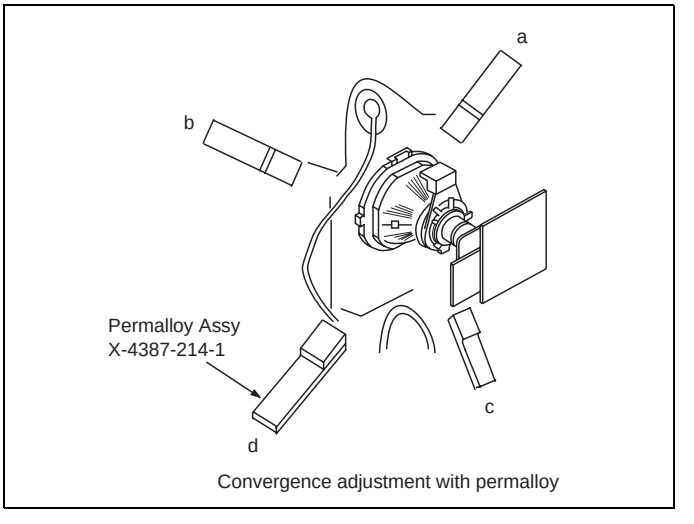


Fig 3-5

Note : If you are unable to adjust the corner convergence properly, this can be corrected with the use of permalloys.

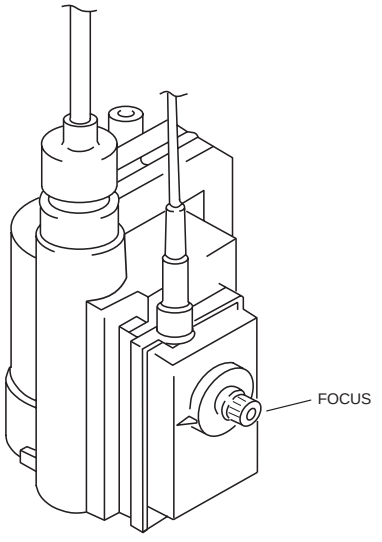




Convergence adjustment with permalloy

3-3. FOCUS

1. Receive a television broadcast signal.
2. Normalize the picture setting.
3. Adjust the focus control located on the flyback transformer to obtain the best focus at the centre of the screen.
   Bring only the centre area of the screen into focus, the magenta-ring appears on the screen. In this case, adjust the focus to optimize the screen uniformly.



3-4. SCREEN (G2), WHITE BALANCE

[Adjustment in the service mode using the remote commander]

G2 adjustment (RV702)

1. Input a dot signal from the pattern generator.
2. Set the Picture, Brightness and Colour to minimum.
3. Apply 170V DC from an external power supply to the R, G and B cathodes of the CRT.
4. Whilst watching the picture, adjust the G2 control RV701 [SCREEN] located on the C Board to the point just before the flyback return lines disappear.

White balance adjustment

1. Input an all-white signal.
2. Enter into the Service Mode by pressing ‘TEST’, ‘TEST’ and ‘MENU’ on the Service Commander.
3. Select ‘VIDEO PROC’ from the on screen menu display and press ‘OK’.
4. The ‘VIDEO PROC TDA4780’ menu will appear on the screen.

Video Proc. TDA4780

Item No	Adjustment item	Data Amount
1	BRT	31
2	COL	31
3	PIC	53
4	HUE	31
5	R GAIN	31
6	G GAIN	Adj
7	B GAIN	Adj
8	R LVL REF	31
9	G LVL REF	Adj
10	B LVL REF	Adj
11	PEAK DRV LIMIT	48
12	GAMMA	0
13	SCP ON = 3LEV OFF = 2LEV	OFF
14	DELAY	OFF

5. Set the picture to MAX.
6. Switch the Blue Stretch OFF.
7. Set the ‘R GAIN’ to 31.
8. Adjust the ‘G GAIN’ and ‘B GAIN’ so that the white balance becomes optimum.
9. Press the ‘OK’ button to write the data for each item.
10. Set the picture to MIN.
11. Set the ‘R LVL REF’ to 31.
12. Adjust the ‘G LVL REF’, and ‘B LVL REF’ with the left and right buttons on the remote commander so that the white balancebecomes optimum.
13. Press the ‘OK’ button to write the data for each item.
14. Switch the Blue Stretch to ON.

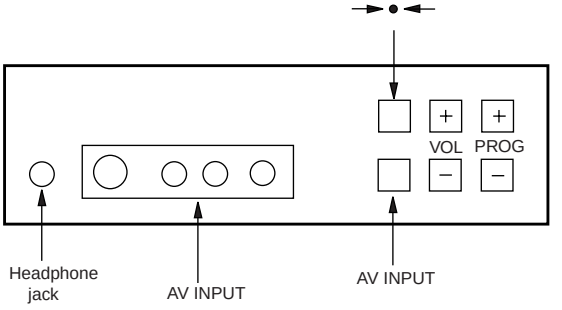
SECTION 4
CIRCUIT ADJUSTMENTS

4-1. ELECTRICAL ADJUSTMENTS

Service adjustments to this model can be performed using the supplied Remote Commander RM-862.

HOW TO ENTER INTO SERVICE MODE

1. Turn on the main power switch of the set while pressing PROG + (plus) and PROG - (minus) buttons on the front panel.



2. "TT" will appear in the upper right corner of the screen.
3. Press the 'MENU' button on the remote commander to obtain the service menu on the screen.

DEVICES	
Init TV	
Pip, Lumisponder & Autoside	
Sub Adjust	
Video Proc	TDA4780
Col Dec Main	TDA9144
Deflect. Cont	SDA9361
Col Dec Sub	TDA9143
Feature Box	S87C654
AI	TDA9170
DA	SDA9280
Single PIP	SDA9288
Sound	
Line23 det	

4. Push the joystick up (green) or down (blue) on the remote commander to select the adjustment item.
5. Press the centre button to proceed to the next menu.
6. If the required adjustment item is 'Video Proc', push the down button to move to 'Video Proc'.
7. The Menu indicated in Fig 4-3 will appear on the screen.
8. Move the joystick up or down to move to the adjustment item and press the centre (OK) button.
9. Change the data in order to comply with each standard.

Item No	Adjustment item	Data Amount
1	BRT	31
2	COL	31
3	PIC	53
4	HUE	31
5	R GAIN	31
6	G GAIN	Adj
7	B GAIN	Adj
8	R LVL REF	31
9	G LVL REF	Adj
10	B LVL REF	Adj
11	PEAK DRV LIMIT	48
12	GAMMA	0
13	SCP ON = 3LEV OFF = 2LEV	OFF
14	DELAY	OFF
15	DATA BUFF	OFF
16	NTSC MATRIX	OFF
17	HDTV	OFF
18	FSBL	OFF
19	AUTO CUT OFF	ON
20	FSW 2 DIS	OFF
21	FSW 2	OFF
22	FSW 1 DIS	OFF
23	FSW 1	OFF
24	ADAPT BLACK	OFF
25	Y HIGH 1V	OFF
26	MOD2	OFF
27	BLUE STRETCH	During White Balance adjustment OFF, After W/B adjustment ON
28	VM OUT	OFF
29	PEAK DRV ABS	ON
30	TIME CNST PEAK LIMIT	OFF

Fig 4-3

SDA9361 (VIDEO PROC)

Item No	Adjustment item	Data Amount
1	V Size	Adj
2	V Centre	Adj
3	V Linearity	Adj
4	S Correction	Adj
5	H Size	Adj
6	Pin Amp	Adj
7	Up Corner Correction	Adj
8	Low Corner Correction	Adj
9	V Bow	Adj
10	Pin Phase	Adj
11	V Angle	Adj
12	HDE	ON
13	VR	0
14	RABL	ON
15	Blk Dis	OFF
16	2FH 2xLine Freq	ON
17	Stand-by Mode	OFF
18	Vertical	ON
19	BSE Blk Select	OFF
20	SSE Start Scan	OFF
21	SRSE Start Red Scan	OFF
22	GBE Guard Board	OFF
23	STE Scan time table	OFF
24	NSA Self Adaption	ON
25	V EHT comp	28” = 111 32” = 90
26	H EHT comp	28” = 85 32” = 90
27	H Centre	32
28	PWM Start	0

Item No	Adjustment item	Data Amount
29	D/A	0
30	V Blk Time	27
31	H Blk Time	41
32	Start V Scan	0
33	H Blk Phase	61
34	V Scan width 0	0
35	V Scan width 1	0
36	Guard Band	0
37	Start Red Scan	0
38	Number fields	1
39	NI Non Interface	OFF
40	NR V Sync Noise Red	OFF
41	SSC with VBL	ON
42	Min lines/field	0
43	Max lines/field	0
44	AFC EHT comp	0
45	PLL Freq	6
46	VCR	ON
47	Gen Mode	OFF
48	HSWID	ON
49	Int H Phase	Adj
50	PWM width	0
51	Noisy VCR	OFF
52	Killzip	OFF
53	tc3rd	OFF
54	Bandgap 4 off	OFF
55	Bandgap off	OFF
56	Bandgap	0

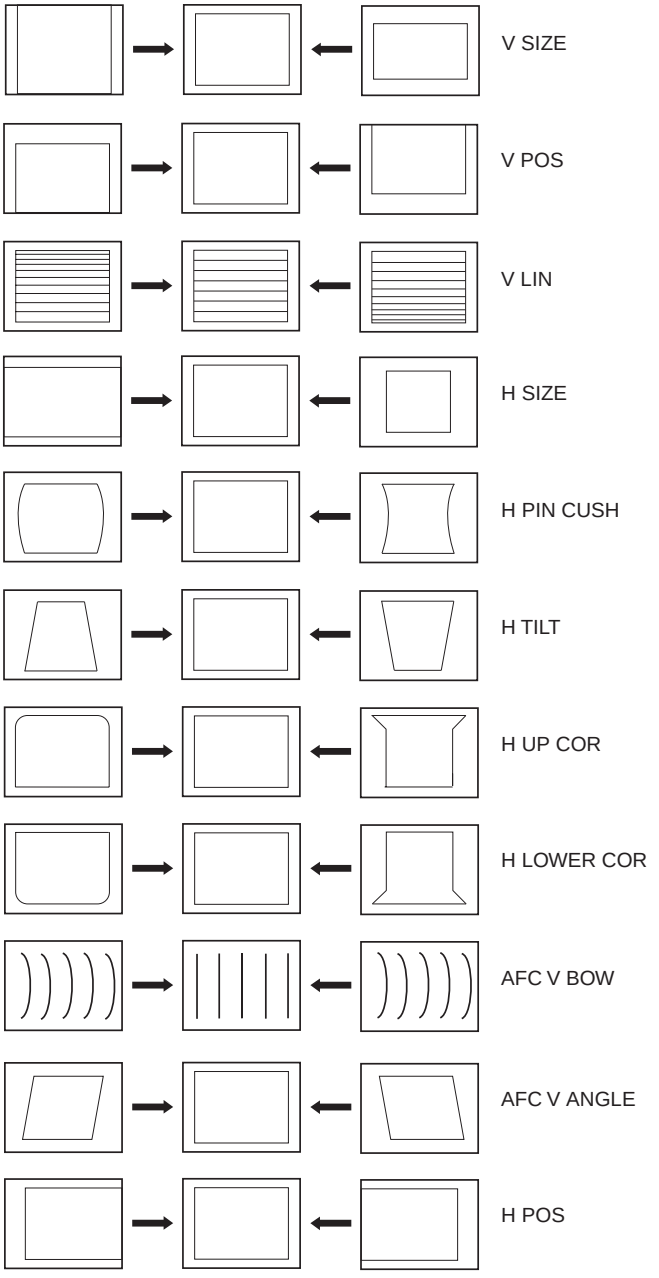
TDA4780 (VIDEO PROC)

Item No	Adjustment item	Data Amount
1	BRT	31
2	COL	31
3	PIC	53
4	HUE	31
5	R GAIN	31
6	G GAIN	Adj
7	B GAIN	Adj
8	R LVL REF	31
9	G LVL REF	Adj
10	B LVL REF	Adj
11	PEAK DRV LIMIT	48
12	GAMMA	0
13	SCP ON = 3LEV OFF = 2LEV	OFF
14	DELAY	OFF
15	DATA BUFF	OFF
16	NTSC MATRIX	OFF
17	HDTV	OFF
18	FSBL	OFF
19	AUTO CUT OFF	ON
20	FSW 2 DIS	OFF
21	FSW 2	OFF
22	FSW 1 DIS	OFF
23	FSW 1	OFF
24	ADAPT BLACK	OFF
25	Y HIGH 1V	OFF
26	MOD2	OFF
27	BLUE STRETCH	During White Balance adjustment OFF, After W/B adjustment ON
28	VM OUT	OFF
29	PEAK DRV ABS	ON
30	TIME CNST PEAK LIMIT	OFF

DEFLECTION SYSTEM ADJUSTMENT

1. Enter into the service mode and select ‘Deflection cont’. The ‘Deflect cont. SDA9361’ adjustment menu will be displayed.
2. Select and adjust each item in order to get an optimum image.

Item No	Adjustment item	Data Amount
1	V Size	Adj
2	V Centre	Adj
3	V Linearity	Adj
4	S Correction	Adj
5	H Size	Adj
6	Pin Amp	Adj
7	Up Corner Correction	Adj
8	Low Corner Correction	Adj
9	V Bow	Adj
10	Pin Phase	Adj
11	V Angle	Adj
12	HDE	ON
13	VR	0
14	RABL	ON
15	Blk Dis	OFF
16	2FH 2xLine Freq	ON
17	Stand-by Mode	OFF
18	Vertical	ON
19	BSE Blk Select	OFF
20	SSE Start Scan	OFF
21	SRSE Start Red Scan	OFF
22	GBE Guard Board	OFF
23	STE Scan time table	OFF
24	NSA Self Adaption	ON
25	V EHT comp	28” = 111 32” = 90
26	H EHT comp	28” = 85 32” = 90
27	H Centre	32
28	PWM Start	0



4-2. VOLUME ELECTRICAL ADJUSTMENTS

Sub Brightness Adjustment

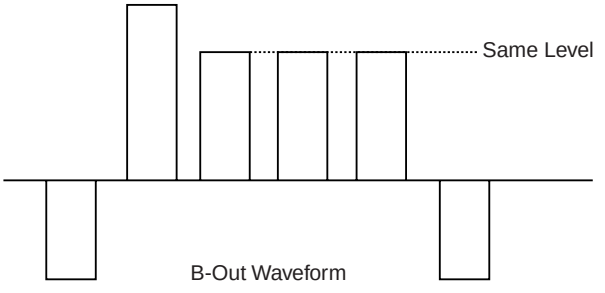
1. Enter into the service mode (Device Menu).
2. Select ‘SUB ADJUST MENU’.

Sub adjustment
Sub Picture
Sub Color
Sub Brightness
4/3 Centre
PAP H-Centre
PAP HWE-Offset

3. Adjust the value according to the following advice.

Sub Colour Adjustment

1. Input a PAL colour bar signal.
2. Connect an oscilloscope to CN3703.
3. Enter into the ‘SERVICE MODE’.
4. Choose ‘SUB ADJUST’.
5. Enter into ‘Sub Colour’ mode.
6. Adjust data so that the right sides of the waveforms are of equal height.



4-2. TEST MODE 2:

Is available by pressing 'TEST' button twice, OSD 'TT' appears. The functions described below are available by pressing the two numbers. To release the Test mode 2, press 0, 10, 20 ... twice or switch the TV set into Stand-by Mode. Pressing the two Local Control buttons (+ and -) during Power ON will also switch into 'TT' mode.
In 'TT' mode, it is possible to remove the Menu from the screen by pressing the Speaker Off button once. Pressing the Speaker OFF button a second time will cause the menu to reappear. The Function is kept even when the menu is not displayed !!.

00	Switch back to normal mode - 'TT' mode off
01	Switch service menu on
02	Direct access to Noise reduction
03	Set Volume to 30%
04	Service menu in 'Service Mode'
05	Service menu in 'Production Mode'
06	Set Volume to 80%
07	Ageing Mode
08	Shipping Condition
09	Language Reset
10	The 'TT' number will be deleted
11	Direct access to Balance
12	Direct access to Hue
13	Display of TV set configuration
14	Production Info Display
15	Read Analog from ROM
16	Save Analog F in NVM
17	This function presets the Labels for the AV sources : AV1, RGB, AV2, YC2, AV3, YC3, AV4 and YC4.
18	No function
19	No function
20	See 'TT10'
21	Picture Rotation automatic function (-4) -> (+4) -> 0
22	Error Monitor Display
23	Direct access to Sub Brightness Adjustment
24	Direct access to Sub Colour
25	Status Menu Display
26	Text character selection (Char set 06 -> West Europe)
27	Text character selection (Char set 38 -> East Europe)
28	Text character selection (Char set 40 -> West Europe) US English
29	Text character selection (Char set 55 -> West Europe) Turkish
30	See 'TT10'
31	No function
32	No function
33	No function
34	No function
35	No function
36	No function
37	No function
38	Screen Position
39	Reset Programme Table
40	See 'TT10'
41	Picture Min
42	No function
43	No function
44	No function
45	Set NVM to Protect Mode
46	IR Channel Pressetting Mode. The channel pressetting- can be done using a Special transmitter. Sequence: 'TT46' -> --PR Number select display appears Select Prog No. from where the channel shall be stored. --> Now TV is waiting for IR sequence <-- --> If no IR transmission starts 'TT46 is released after 20 secs <-- ! Note: when 'TT46' is active, any transmission will be interpreted as PROG data !
47	No function
48	No function
49	New Initialize
50	See 'TT10'
51	Strobo mode is active
52	No function
53	No function
54	Direct access to Velocity Modulation VM (Production use)
55	Slicer High
56	Slicer No
57	Megatext Service Menu ON
58	MTX Small Framing Code Window

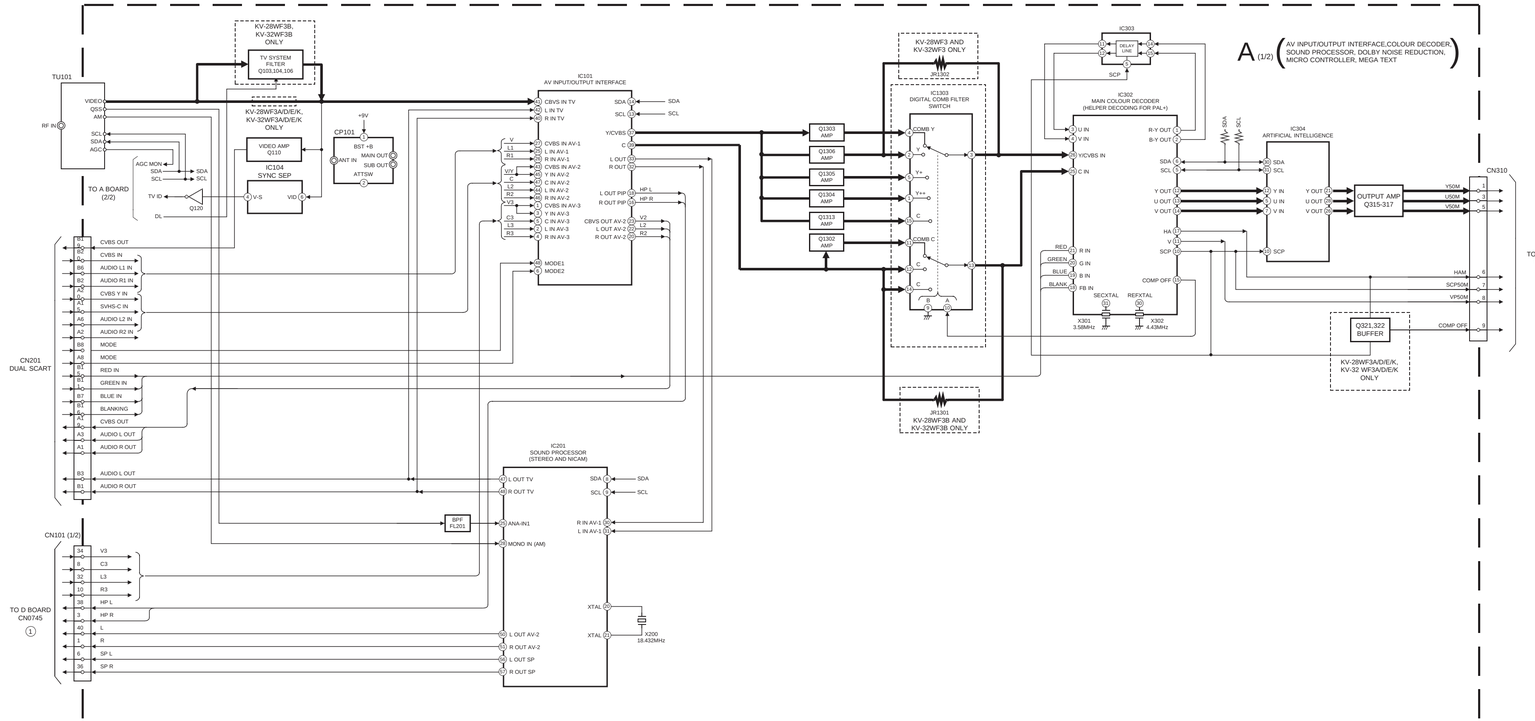
continued on page 30

continued

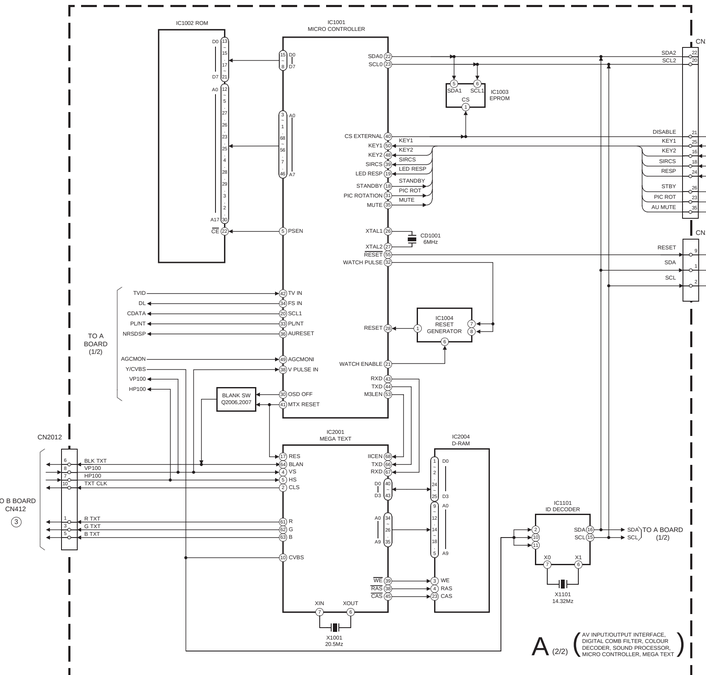
82	Default value for TDA 9170
83	Default value for SAA 7185
84	Default value for TDA 4780
85	Default value for TDA 9144
86	Default value for TDA 9143
87	Default value for SDA 9288
88	Text character set Russia / east
89	Text character set Russia / west
90	Tenth entry is deleted
91	DOLBY mode normal
92	No function
93	No function
94	Noise sequence ‘left’
95	Noise sequence ‘centre’
96	Noise sequence ‘right’
97	Noise sequence ‘surround’
98	Surround mode ‘off’
99	DOLBY mode ‘phantom’

SECTION 5
DIAGRAMS

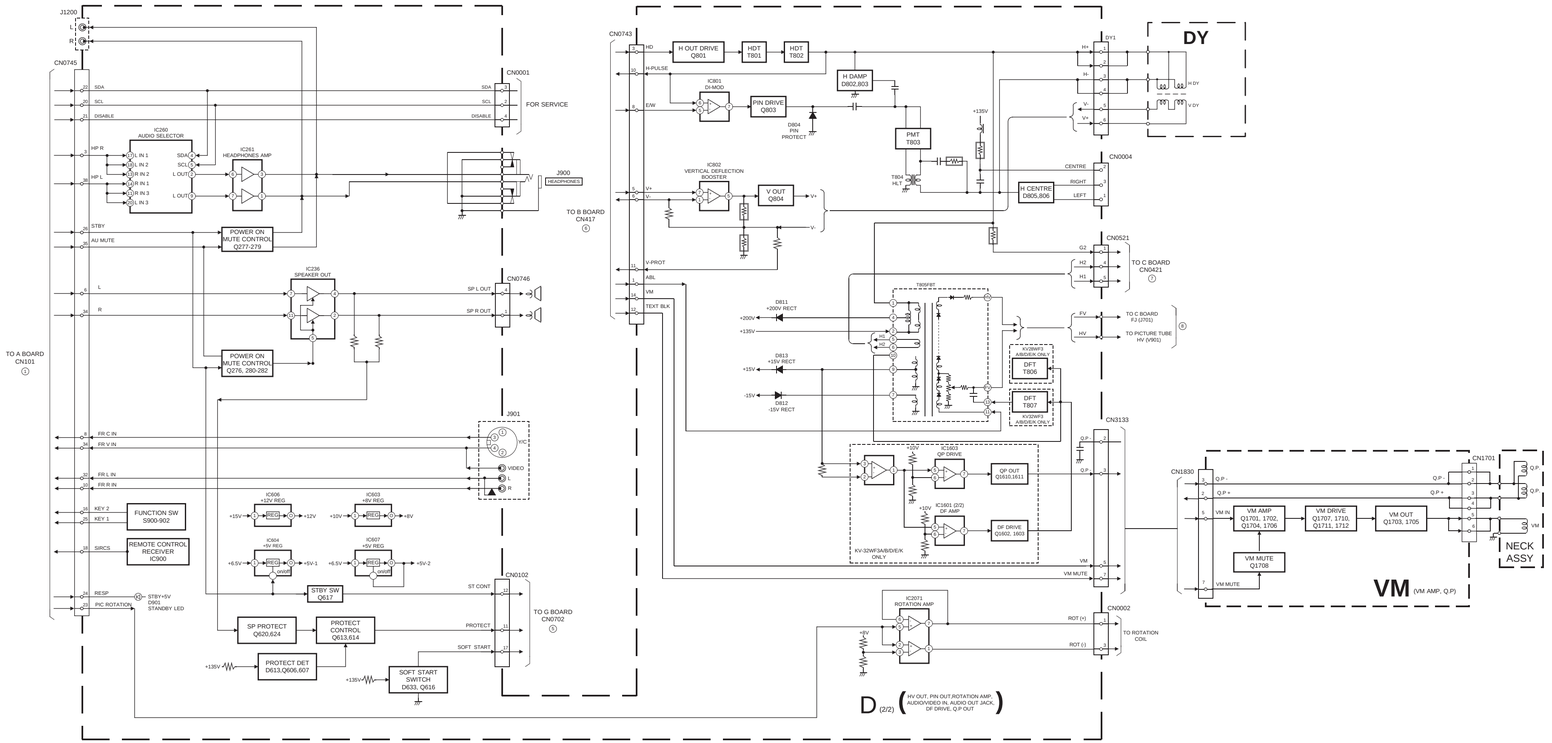
BLOCK DIAGRAM (1)



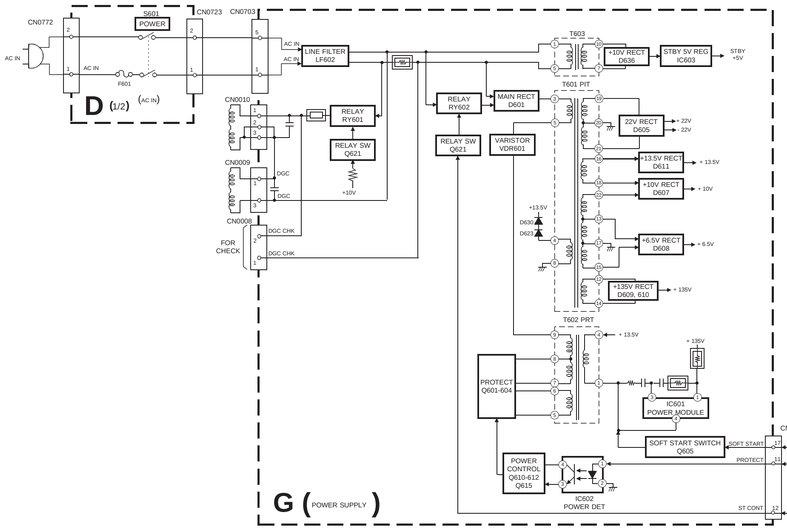
BLOCK DIAGRAM (2)



BLOCK DIAGRAM (3)

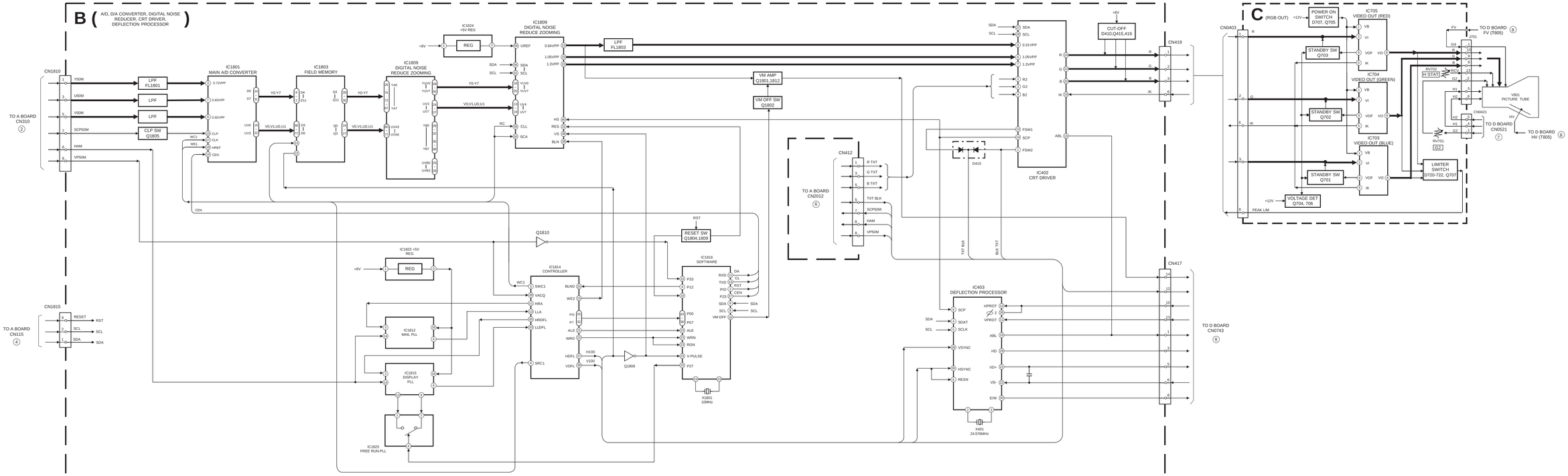


BLOCK DIAGRAM (4)

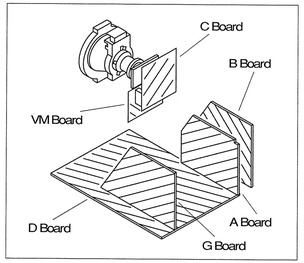


BLOCK DIAGRAM (5)

BLOCK DIAGRAM (6)



5-2. CIRCUIT BOARD LOCATION



5-3. SCHEMATIC DIAGRAMS AND PRINTED WIRING BOARDS

Note :

- All capacitors are in µF unless otherwise noted.
- pF : µµF 50WV or less are not indicated except for electrolytic types.
- Indication of resistance, which does not have one for rating electrical power, is as follows.

Pitch : 5mm
Electrical power rating : 1/4W

- Chip resistors are 1/10W
- All resistors are in ohms.
  k = 1000 ohms, M = 1000,000 ohms
- : nonflammable resistor.
- : fusible resistor.
- : internal component.
- : panel designation or adjustment for repair.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
- All voltages are in Volts.
- Readings are taken with a 10Mohm digital mutimeter.
- Readings are taken with a color bar input signal.
- Voltage variations may be noted due to normal production tolerances.
- : B + bus.
- : B - bus.
- : RF signal path.
- : earth - ground.
- : earth - chassis.

Reference Information

RESISTOR	RN	: METAL FILM
	RC	: SOLID
	FPRD	: NON FLAMMABLE CARBON
	FUSE	: NON FLAMMABLE FUSIBLE
	RS	: NON FLAMMABLE METAL OXIDE
	RB	: NON FLAMMABLE CEMENT
	RW	: NON FLAMMABLE WIREWOUND
	※	: ADJUSTMENT RESISTOR
COIL	LF-8L	: MICRO INDUCTOR
CAPACITOR	TA	: TANTALUM
	PS	: STYROL
	PP	: POLYPROPYLENE
	PT	: MYLAR
	MPS	: METALIZED POLYESTER
	MPP	: METALIZED POLYPROPYLENE
	ALB	: BIPOLAR
	ALT	: HIGH TEMPERATURE
	ALR	: HIGH RIPPLE

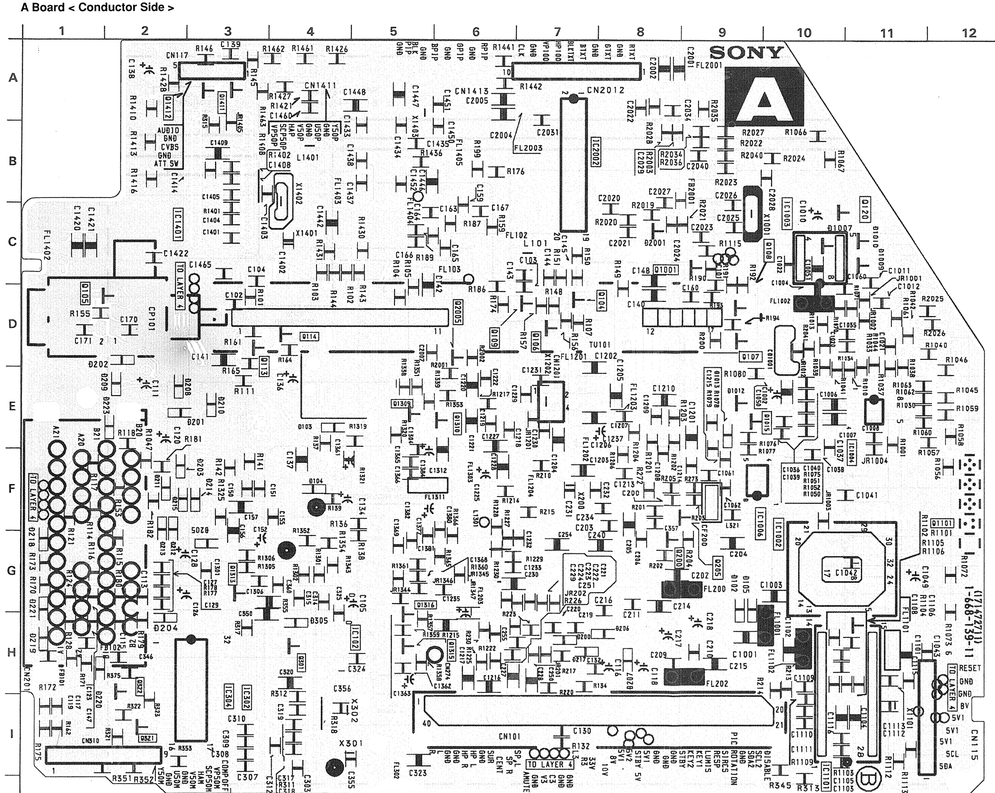
Note : The components identified by shading and marked ⚠ are critical for safety. Replace only with the part numbers specified in the parts list.

Note : Les composants identifiés par une trame et par une marque ⚠ sont d'une importance critique pour la sécurité. Ne les remplacer que par des pièces de numéro spécifié. specified.

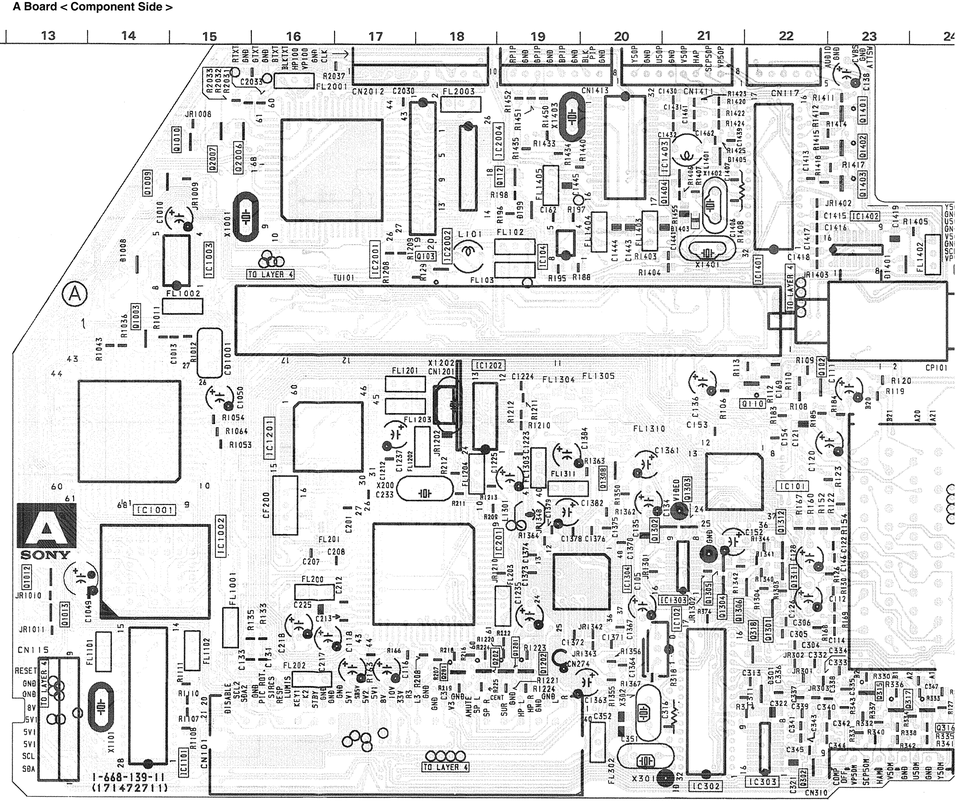
- Readings are taken with a colour-bar signal input.
- Readings are taken with 10M digital multimeter.
- Voltages are dc with respect to ground unless otherwise noted.
- Voltage variations may be noted due to normal production tolerances.
- All voltages are in V.
- Circled numbers are waveform references.
- : B+ bus.
- : signal path. (RF)

A AV INPUT/OUTPUT INTERFACE, COLOUR DECODER, SOUND PROCESSOR, DOLBY NOISE REDUCTION, MICRO CONTROLLER, MEGA TEXT

A Board < Conductor Side >

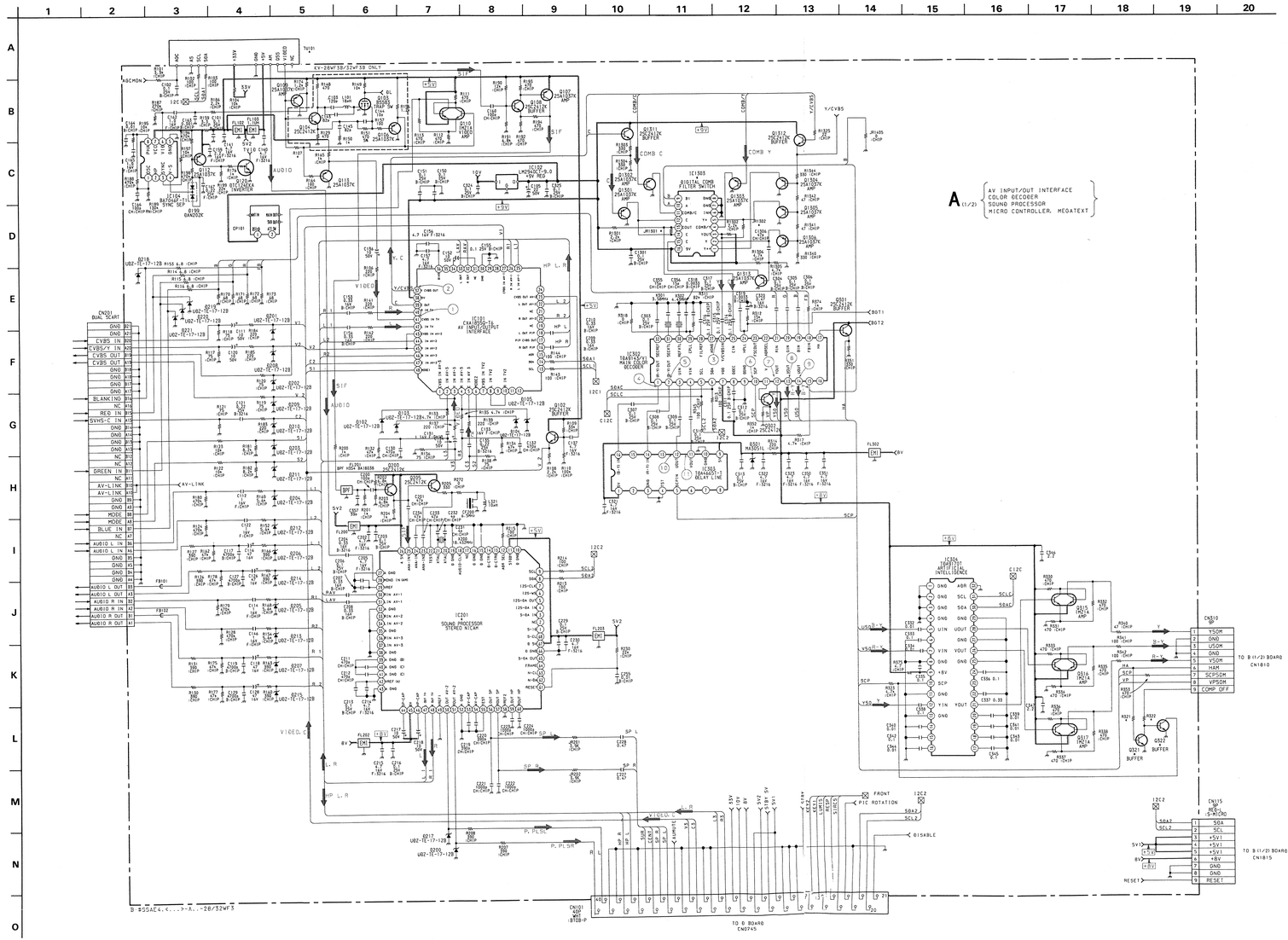


A Board < Component Side >



A BOARD

IC		Q1311	G - 22
IC001	E - 22	Q1312	F - 22
IC002	H - 4	Q1313	G - 3
IC004	C - 19	Q2005	D - 6
IC201	G - 19	Q2006	B - 15
IC302	H - 3	Q2007	B - 15
IC303	I - 22	**DIODE**	
IC304	H - 3	D102	G - 9
IC1001	F - 14	D103	E - 4
IC1002	G - 10	D104	F - 4
IC1003	C - 10	D105	G - 9
IC1004	E - 11	D199	C - 19
IC1101	I - 10	D200	H - 7
IC2001	C - 17	D201	E - 2
IC2004	B - 19	D202	D - 2
		D203	F - 3
TRANSISTOR		D204	H - 2
Q102	E - 23	D205	F - 3
Q103	C - 18	D206	H - 8
Q104	D - 8	D207	H - 8
Q106	D - 7	D208	E - 2
Q108	C - 10	D209	E - 2
Q109	D - 7	D210	E - 3
Q112	B - 19	D211	F - 2
Q112	B - 19	D212	G - 2
Q120	C - 11	D213	G - 2
Q200	G - 8	D214	F - 3
Q205	F - 9	D215	F - 2
Q301	H - 4	D217	H - 7
Q302	I - 22	D218	G - 1
Q315	H - 23	D219	H - 1
Q316	I - 24	D220	H - 1
Q317	I - 24	D221	G - 1
Q318	H - 22	D223	E - 2
Q321	I - 2	D301	H - 22
Q322	H - 2	D1007	C - 10
Q1001	C - 9	D1008	C - 14
Q1011	C - 14	D1009	C - 11
Q1301	H - 22	D1010	C - 11
Q1304	G - 21	D2001	C - 8
Q1305	G - 21		
Q1306	G- 22		



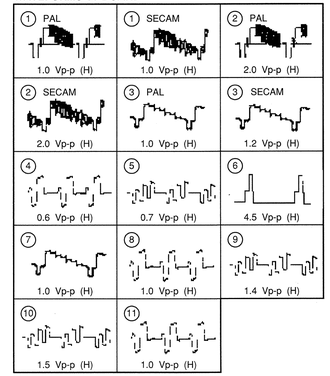
A (1/2) BOARD IC VOLTAGE TABLE

IC Voltage Table					
Ref No	Pin No	Voltage (V)	Ref No	Pin No	Voltage (V)
IC201	4	0.5	IC1201	4	4.7
	5 - 6	4.7		13	4.7
	7	2.4		31	4.7
	8 - 9	4.7		35	4.7
	20	2.4		37	2.7
	24	4.4		39	2.2
	25	8.8		40	2.7
	26	4.4		41	4.7
	28	3.8		45	4.8
	29	2.7		29	2.7
	30 - 31	3.8		30 - 31	3.8
	39 - 42	3.8		39 - 42	3.8
	44	6.2		44	6.2
	45	8.0		45	8.0
	46	7.0	IC1303	1	5.0
	47 - 48	3.8		5	0.6
	50 - 51	3.7		11 - 12	3.0
	53 - 54	3.8		14	1.4
	56 - 57	1.2		16	1.2
IC302	61	4.8	IC1401	1 - 2	2.0
	1 - 2	2.0		3 - 4	2 - 4
	3 - 4	2.4		5	3.5
	5	3.0		6	4.0
	6	4.0		7	7.8
	7	8.0		8	5.0
	8	5.0		10	0.8
	10	0.5		12	2.4
	12	3.2		13 - 14	26
	13 - 14	2.6		15	8.0
	15	8.0		17	0.3
	17	0.3		22	7.8
	19	1.6		24	3.6
	21	1.0		26	3.3
	23 - 24	4.0		28	3.5
	26	3.7		29	4.3
	28	3.5		30	2.6
	29	5.0		31	2.6
	30	2.5		32	3.8
	31	2.5			
	32	2.0			

A BOARD * MARK

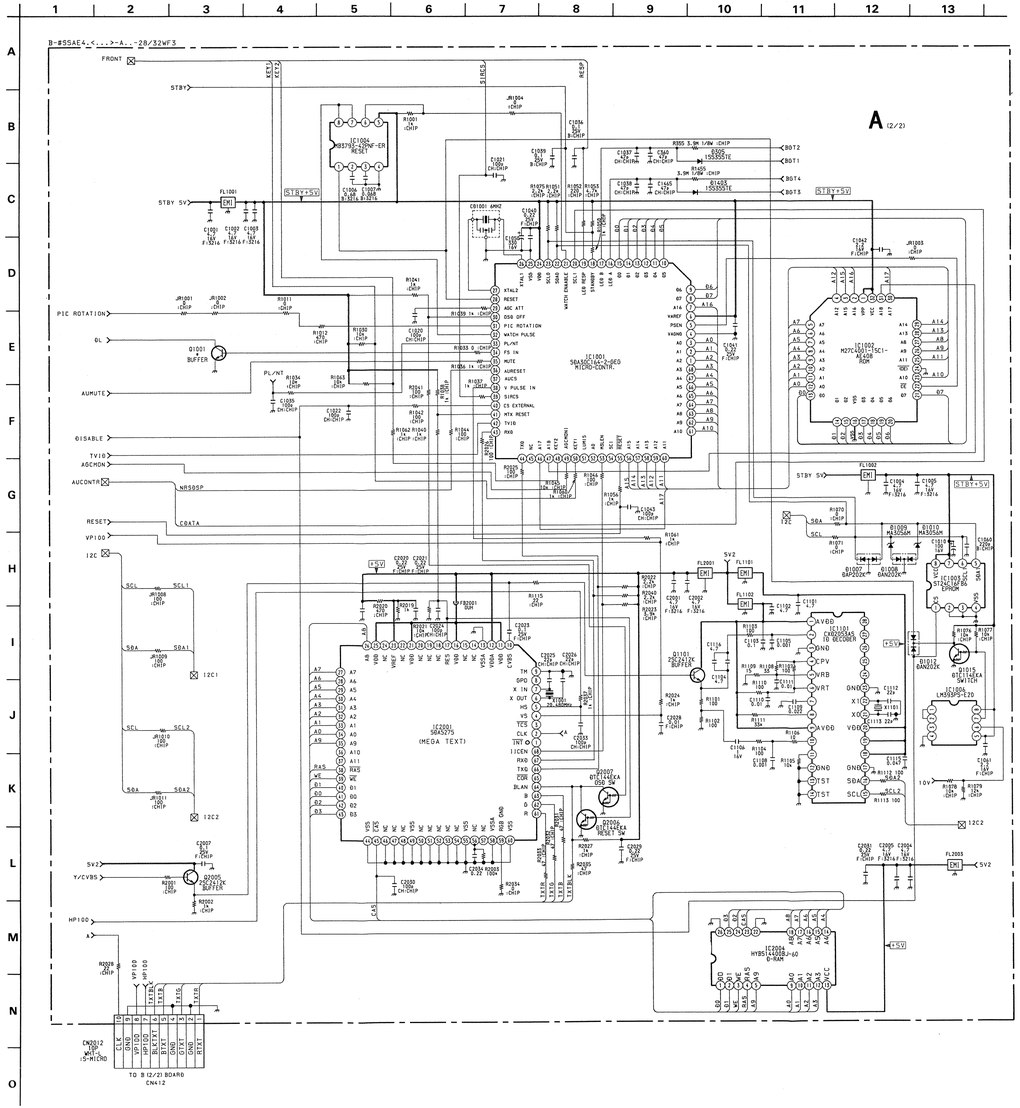
Ref	28WF3A	28WF3B	28WF3D	28WF3E	28WF3K	32WF3A	32WF3B	32WF3D	32WF3E	32WF3K
IC201	MSP3400C-PS-C6-T	MSP3410D-PS-B4-T	MSP3400C-PS-C6-T	MSP3410D-PS-B4-T	MSP3410D-PS-B4-T	MSP3400C-PS-C6-T	MSP3410D-PS-B4-T	MSP3400C-PS-C6-T	MSP3410D-PS-B4-T	MSP3410D-PS-B4-T
IC1303	MC14052BDR2	-	MC14052BDR2	MC14052BDR2	MC14052BDR2	MC14052BDR2	-	MC14052BDR2	MC14052BDR2	MC14052BDR2
JR1301	-	SHORT 0	-	-	-	-	SHORT 0	-	-	-
JR1302	-	SHORT 0	-	-	-	-	SHORT 0	-	-	-
Q321	2SC2412K-T-146-R	-	2SC2412K-T-146-R	2SC2412K-T-146-R	2SC2412K-T-146-R	2SC2412K-T-146-R	-	2SC2412K-T-146-R	2SC2412K-T-146-R	2SC2412K-T-146-R
Q322	2SC2412K-T-146-R	-	2SC2412K-T-146-R	2SC2412K-T-146-R	2SC2412K-T-146-R	2SC2412K-T-146-R	-	2SC2412K-T-146-R	2SC2412K-T-146-R	2SC2412K-T-146-R
Q1001	-	2SC2412K-T-146-R	-	-	-	-	2SC2412K-T-146-R	-	-	-
R107	SHORT 0	-	SHORT 0	SHORT 0	SHORT 0	SHORT 0	-	SHORT 0	SHORT 0	SHORT 0
R321	10K	-	10K	10K	10K	10K	-	10K	10K	10K
R322	10K	-	10K	10K	10K	10K	-	10K	10K	10K
TU101	1-693-338-11	1-693-340-11	1-693-338-11	1-693-338-11	1-693-338-11	1-693-338-11	1-693-340-11	1-693-338-11	1-693-338-11	1-693-338-11
R1052	330	330	330	220	220	330	330	330	220	220

WAVEFORMS A BOARD


1 PAL 1.0 Vp-p (H)
1 SECAM 1.0 Vp-p (H)
2 PAL 2.0 Vp-p (H)
2 SECAM 2.0 Vp-p (H)
3 PAL 1.0 Vp-p (H)
3 SECAM 1.2 Vp-p (H)
4 0.6 Vp-p (H)
5 0.7 Vp-p (H)
6 4.5 Vp-p (H)
7 1.0 Vp-p (H)
8 1.0 Vp-p (H)
9 1.4 Vp-p (H)
10 1.5 Vp-p (H)
11 1.0 Vp-p (H)

A (1/2) BOARD TRANSISTOR VOLTAGE TABLE

Transistor Voltage Table				
Ref No	(B) Base	(C) Collector	(E) Emitter
Q102	1.9	4.7	1.3
Q105	0.08	4.5	0.08
Q107	4.4	1.7	5.0
Q108	1.8	4.4	1.2
Q112	4.3	4.9	5.0
Q120	4.6	0.1	0.1
Q2001	0.5	8.0	0.4
Q302	-	8.0	0.3
Q318	0.1	5.2	0.1
Q1201	8.6	5.0	9.2
Q1202	0.7	5.0	9.2
Q1301	1.9	-	0.2
Q1302	-	-	0.6
Q1303	0.8	-	1.5
Q1304	2.2	-	0.1
Q1305	2.0	-	0.1
Q1306	1.7	-	-
Q1307	-	3.4	0.1
Q1308	3.5	4.7	2.9
Q1309	0.9	0.1	1.6
Q1310	1.0	0.1	1.6
Q1311	4.5	9.0	3.9
Q1312	4.5	9.0	-
Q1313	4.6	0.7	0.1
Q1314	4.8	4.7	4.3
Q1404	4.5	7.8	3.8
Q1411	0.5	8.0	0.6
Q1412	0.1	8.0	0.1
Q1201	2.6	8.6	2.1
Q1202	2.6	8.6	2.1



A (2/2) BOARD IC VOLTAGE TABLE

IC Voltage Table

Ref No	Pin No	Voltage (V)	Ref No	Pin No	Voltage (V)
IC101	1 - 5	4.6	IC1101	1	4.8
	7 - 8	4.6		2	1.1
	10	4.6		4	0.9
	17	4.6		5	0.3
	23	4.6		6 - 7	2.4
	29	4.6		8	1.4
	31	4.6		9	4.7
	34	4.6		10	1.7
	36	4.6		11	1.5
	38	9.0		16	4.0
	40 - 47	4.6		18 - 20	4.7
IC1001	5	2.4	IC2001	21	2.5
	6	4.8		22	2.3
	19	3.6		2	0.4
	20	0.1		5	0.3
	24	4.8		6 - 7	1.6
	26	2.1		8	4.0
	27	2.3		10	1.0
	28	4.6		11 - 12	4.7
	30	0.1		16	4.7
	31 - 32	2.4		21	4.7
	33	4.8		23	2.9
	36	4.1		25	4.7
	38	0.1		66	4.7
	39	0.6		68	4.7
	40	4.8			
	41	0.1			
	42	4.8			
	43	4.4			
	44	4.1			
	48	4.8			
	49	2.2			
	50	4.8			
	52	4.8			
	54	4.8			

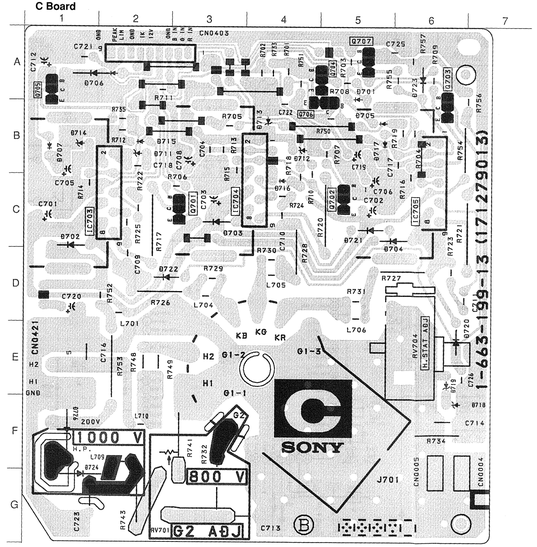
A (2/2) BOARD TRANSISTOR VOLTAGE TABLE

Transistor Voltage Table

Ref No	(B) Base	(C) Collector	(E) Emitter
Q1001	0.1	0.7	0.1
Q1004	0.1	0.7	-
Q1101	3.3	5.0	2.6

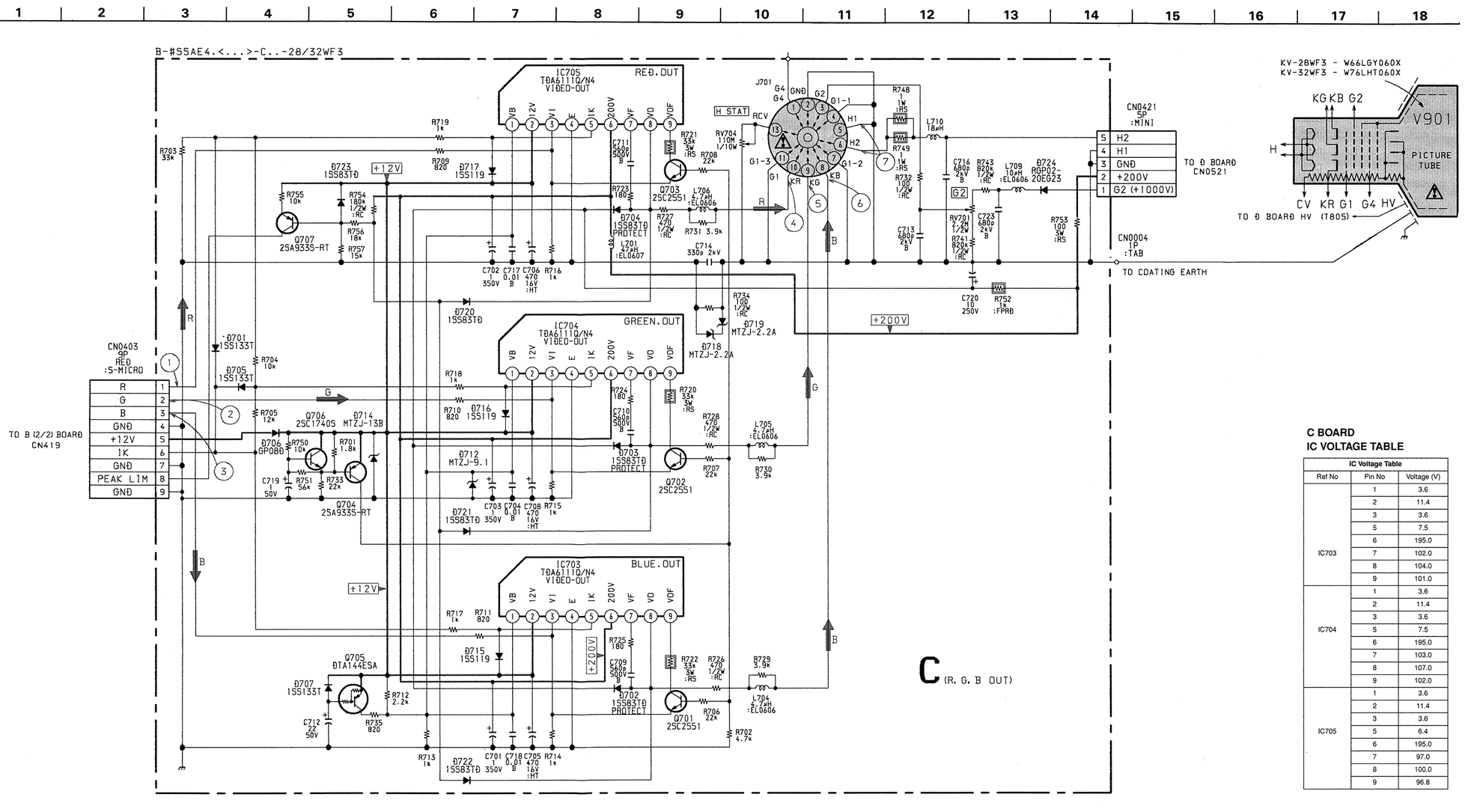
C [RGB OUT]

C Board



C BOARD

IC	
IC703	C-1
IC704	C-3
IC705	C-6
TRANSISTOR	
Q701	C-3
Q702	C-5
Q703	A-6
Q704	A-5
Q705	A-1
Q706	B-4
Q707	A-5
DIODE	
D701	A-5
D702	C-1
D703	C-3
D704	C-6
D705	B-5
D706	A-1
D707	B-1
D712	B-4
D714	B-1
D715	B-2
D716	C-4
D717	B-6
D718	F-6
D719	E-6
D720	E-6
D721	C-5
D722	D-2
D723	A-6
D724	F-1
VARIABLE RESISTOR	
RV701	G-1
RV704	E-6



WAVEFORMS C BOARD

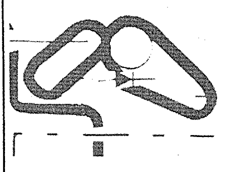
① 2.0 Vp-p (2H)	② 2.0 Vp-p (2H)	③ 2.0 Vp-p (2H)
④ 107 Vp-p (2H)	⑤ 95 Vp-p (2H)	⑥ 100 Vp-p (2H)
⑦ 30 Vp-p (2H)		

C BOARD IC VOLTAGE TABLE

IC Voltage Table		
Ref No	Pin No	Voltage (V)
IC703	1	3.6
	2	11.4
	3	3.6
	5	7.5
	6	195.0
	7	102.0
	8	104.0
	9	101.0
IC704	1	3.6
	2	11.4
	3	3.6
	5	7.5
	6	195.0
	7	103.0
	8	107.0
	9	102.0
IC705	1	3.6
	2	11.4
	3	3.6
	5	6.4
	6	195.0
	7	97.0
	8	100.0
	9	96.8

C BOARD TRANSISTOR VOLTAGE TABLE

Transistor Voltage Table			
Ref No	(B) Base	(C) Collector	(E) Emitter
Q701	4.2	3.7	3.6
Q702	4.2	3.7	3.6
Q703	4.2	3.7	3.6
Q704	10.7	11.2	11.3
Q705	11.3	3.6	11.3
Q706	11.3	11.3	10.7
Q707	11.8	9.8	11.3



NOTE:
The circuit indicated as left contains high voltage of over 600 Vp-p. Care must be paid to prevent an electric shock in inspection or repairing.

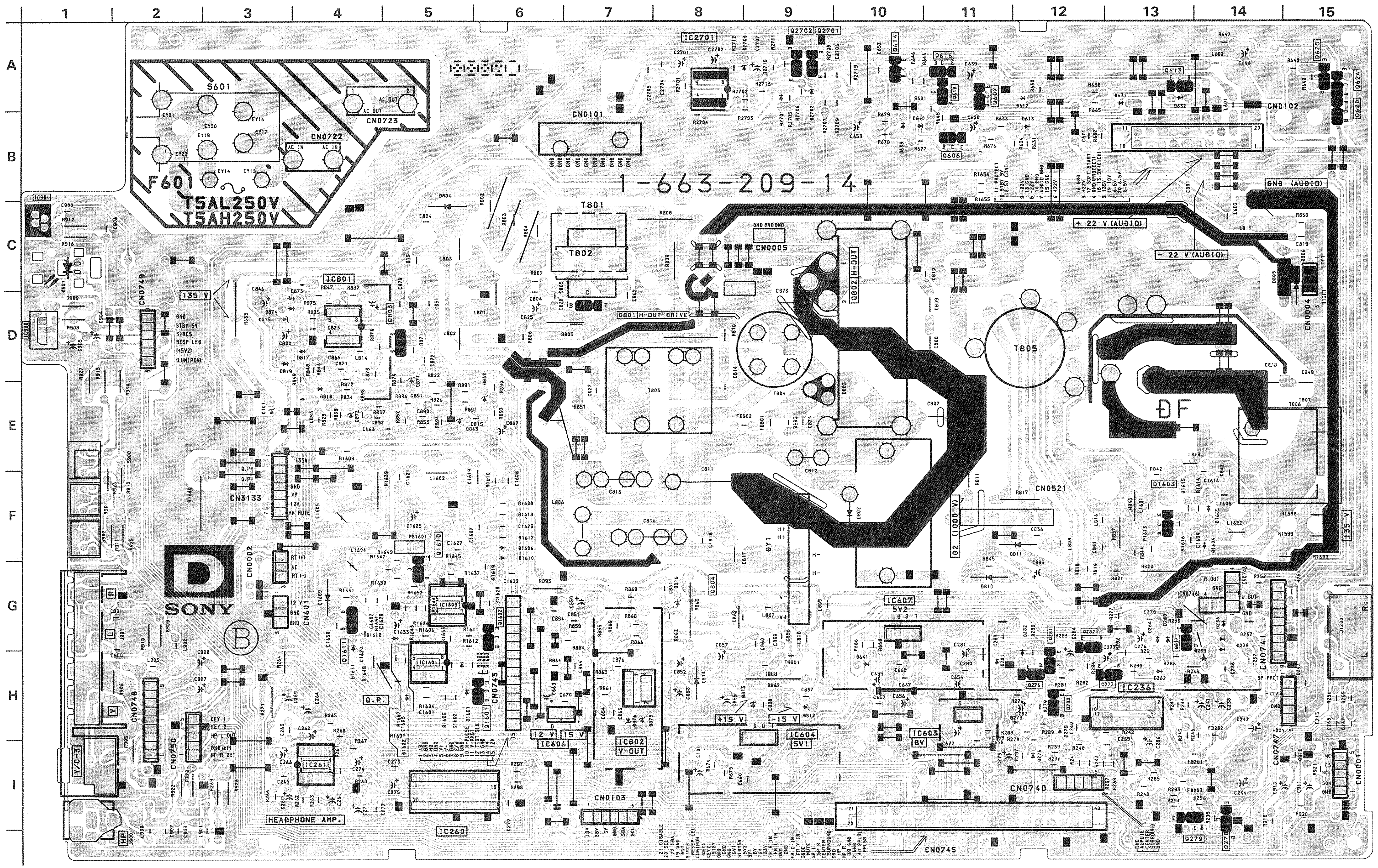
D BOARD

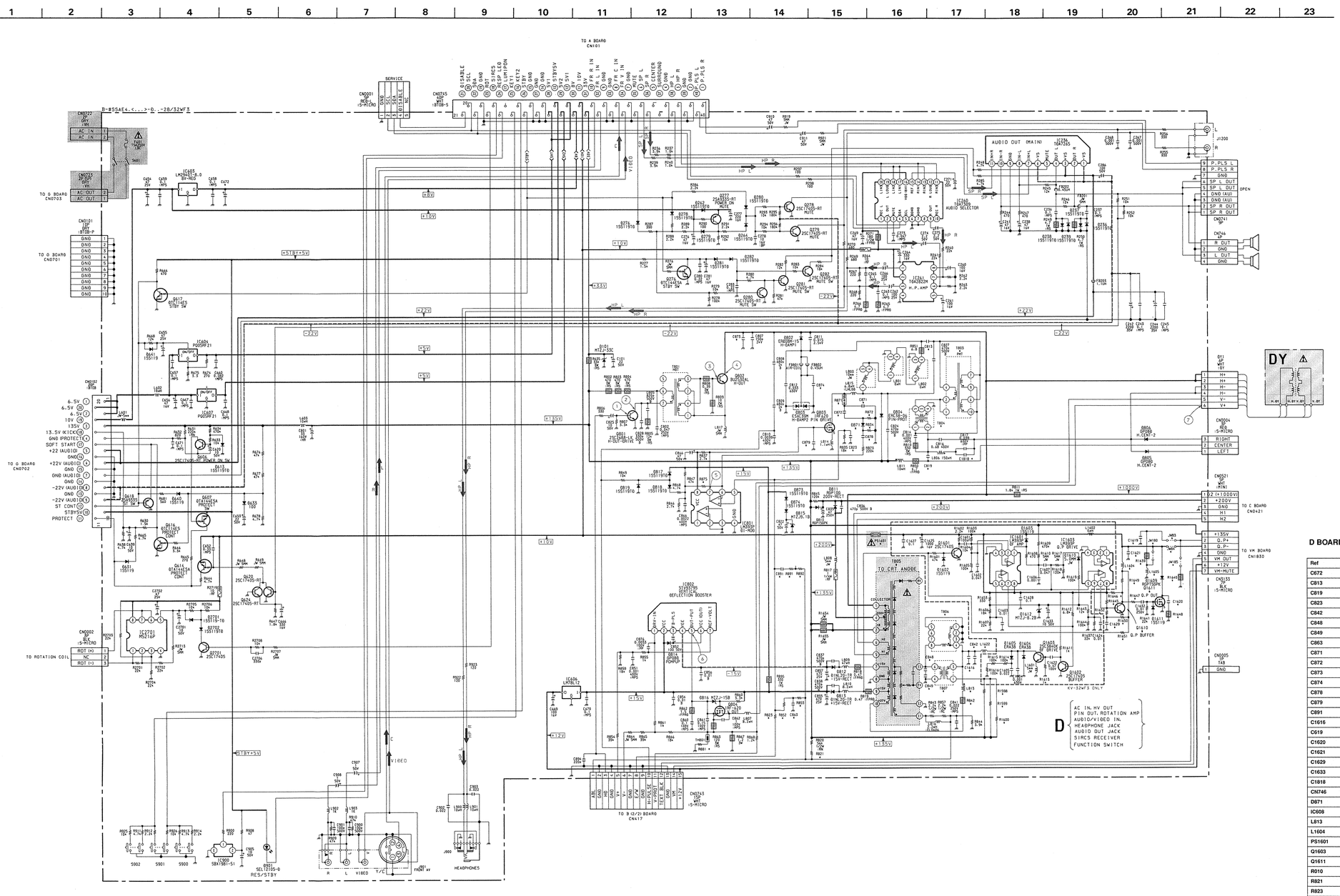
IC		DIODE	
IC236	H - 13	D101	E - 3
IC260	I - 5	D236	G - 14
IC261	I - 4	D237	G - 14
IC603	H - 11	D238	G - 14
IC604	H - 9	D239	G - 14
IC606	H - 7	D262	H - 13
IC607	G- 10	D264	G - 13
IC801	C - 4	D276	I - 12
IC802	H - 8	D278	H - 12
IC1601	H - 5	D279	H - 12
IC1603	G - 5	D280	G - 13
IC2701	A - 8	D281	H - 12
TRANSISTOR		D282	G - 12
Q276	H12	D612	A - 12
Q277	H - 13	D613	B - 12
Q278	I - 14	D631	A - 13
Q279	I - 14	D632	A - 14
Q280	H - 12	D633	B - 11
Q281	G - 12	D802	F - 10
Q282	G - 13	D803	E - 10
Q606	B- 11	D804	B - 5
Q607	A - 11	D805	C - 15
Q613	A - 13	D806	C - 15
Q614	A - 10	D810	G - 11
Q616	A - 11	D811	F - 12
Q617	G - 13	D812	H - 9
Q618	A - 11	D813	H - 9
Q620	A - 15	D814	H - 8
Q624	A - 15	D815	D - 3
Q801	D - 7	D816	G - 8
D802	C - 10	D817	D - 4
Q803	D - 5	D818	E - 4
Q804	G - 8	D819	D - 3
Q1601	H - 6	D871	D - 5
Q1602	G - 6	D873	D - 4
Q1603	F - 13	D874	D - 3
Q1610	F - 5	D1602	H - 5
Q1611	G - 4	D1603	H - 6
Q2701	A - 9	D1604	F - 14
		D1605	F - 14
		D1609	G - 4
		D1611	H - 4
		D2701	A - 9
		D2702	A - 9

D

[HV OUT, PIN OUT ROTATION AMP, AUDIO/VIDEO IN, AUDIO OUT JACK, DF DRIVE, QP OUT]

D Board





WAVEFORMS D BOARD

① 3.5 Vp-p (2H)	② 210 Vp-p (2H)	③ 11 Vp-p (2H)
④ 1.1K Vp-p (2H)	⑤ 10 Vp-p (2H)	⑥ 62 Vp-p (2H)
⑦ 100 Vp-p (2H)		

D BOARD TRANSISTOR VOLTAGE TABLE

Transistor Voltage Table			
Ref No	(B) Base	(C) Collector	(E) Emitter
Q276	0.7	4.0	-
Q277	10.0	-	9.7
Q278	-1.3	-	-
Q279	-1.3	-	-1.3
Q280	0.4	0.7	-
Q281	0.7	-	-
Q282	0.7	-	-
Q801	-1.0	101.0	-
Q802	-	136.0	-
Q803	9.0	15.0	-
Q804	11.3	0.1	-1.3
Q606	0.5	4.8	0.3
Q607	4.8	1.6	4.8
Q613	13.5	-	-
Q614	10.0	9.0	10.0
Q616	0.7	-	-
Q617	0.7	3.5	-
Q618	3.5	-	-
Q620	-	10.0	-
Q624	-	10.0	-
Q2701	-	2.3	-
Q1610	-0.5	2.2	-
Q1611	0.2	43.4	-

D BOARD * MARK

Ref	KV-28WF3	KV-32WF3	Ref	KV-28WF3	KV-32WF3
C672	-	47MF	R842	33	-
C813	0.68MF	0.82MF	R852	390K	JW 5.0MM
C819	0.022MF	0.033MF	R853	220K	180K
C823	0.01MF	0.1MF	R871	100K	-
C842	0.0047MF	-	R872	470K	-
C848	-	150PF	R875	3.3K	JW 5.0MM
C849	-	150PF	R881	4.7	22
C863	-	0.1MF	R891	-	47K
C871	0.0082MF	-	R892	-	JW 5.0MM
C872	0.1MF	-	R910	-	-
C873	-	330PF	R1598	47K	6.8K
C874	1000PF	0.0047MF	R1599	-	6.8K
C878	0.1MF	-	R1600	-	6.8K
C879	-	100PF	R1639	-	220
C891	-	0.002MF	R1640	-	1.5K
C1616	-	0.0018MF	R1645	68K	4.7K
C619	0.1MF	0.018MF	R1646	2.2K	680
C1620	JW 5.0MM	220PF	R1647	JW 5.0MM	560
C1621	0.01MF	0.0047MF	R1648	10K	JW 5.0MM
C1629	0.0068MF	-	R1649	10K	-
C1633	-	10MF	R1650	10K	-
C1818	-	0.0022MF	R1651	33	-
CN746	-	4P	R1652	2.2K	-
D871	1SS119-25TD	-	T803	1-246-897-11	1-247-776-11
IC608	-	LM2940T-8.0	T804	1-429-288-11	1-429-287-11
L813	0UH	-	T805	NX-4003	NX-4123
L1604	0UH	-	T806	DFT	-
PS1601	JW 5.0MM	LINK IC	T807	-	DFT
Q1603	-	2SC3840(3)	JW83	-	JW 5.0MM
Q1611	2SC4793	IRF620	JW84	-	JW 5.0MM
R010	-	47K	JW180	JW 5.0MM	-
R821	6.8K	JW 5.0MM	JW185	-	JW 5.0MM
R823	1.8K	3.3K			
R834	220K	-			

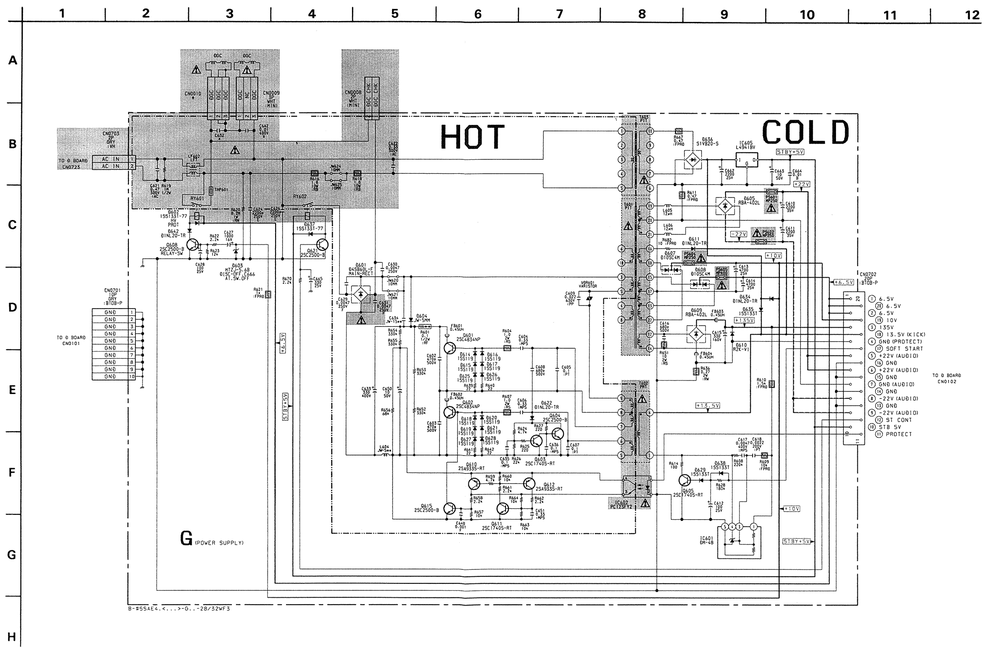
G BOARD * MARK

Ref	28WF3A	28WF3B	28WF3D	28WF3E	28WF3K	32WF3A	32WF3B	32WF3D	32WF3E	32WF3K
C632	JW 10MM	JW 10MM	JW 10MM	JW 10MM	JW 10MM	0.01MF	0.01MF	0.01MF	0.01MF	0.01MF
CN0010	-	-	-	-	-	3P	3P	3P	3P	3P

G BOARD
TRANSISTOR VOLTAGE TABLE

Transistor Voltage Table			
Ref No	(B) Base	(C) Collector	(E) Emitter
Q601	-1.6	-	-
Q602	0.2	293.0	-
Q603	0.6	0.1	-
Q604	0.1	1.4	-
Q605	0.1	11.0	-0.1
Q606		4.8	-0.1
Q610	22.0	-2.3	26.8
Q611	-1.6	26.6	-
Q612	26.7	-1.1	26.8
Q615	-2.6	-1.5	-
Q621	0.6	-	-0.1

NOTE:
The circuit indicated as left contains high voltage of over 600 Vp-p. Care must be paid to prevent an electric shock in inspection or repairing.

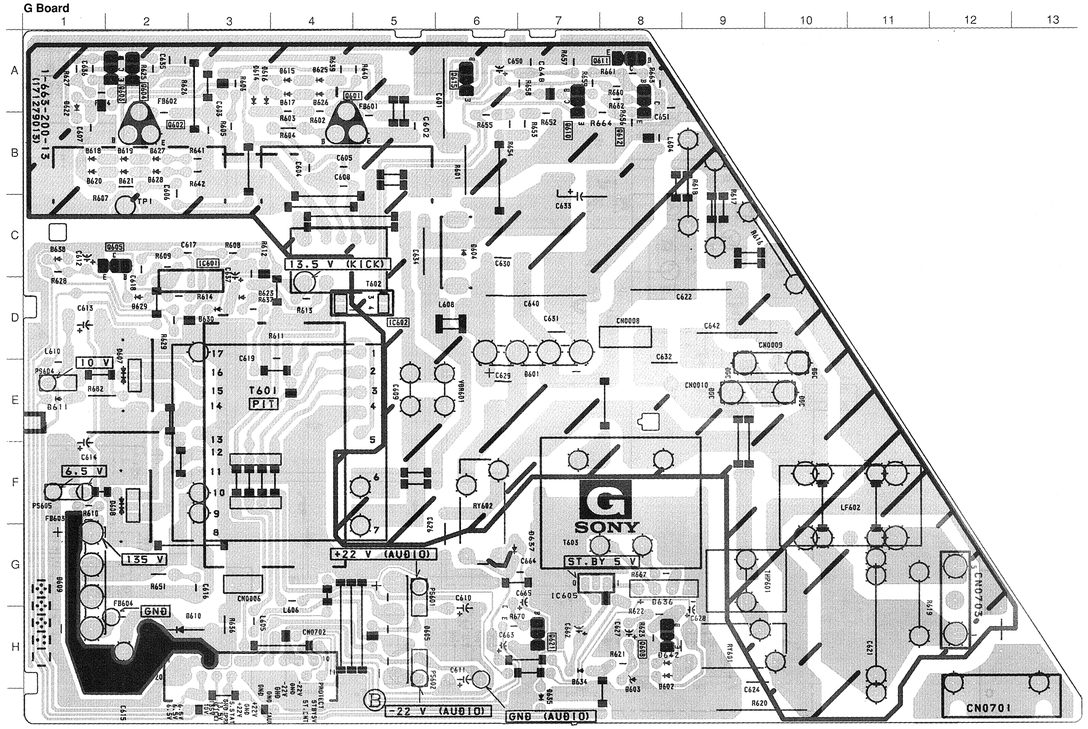


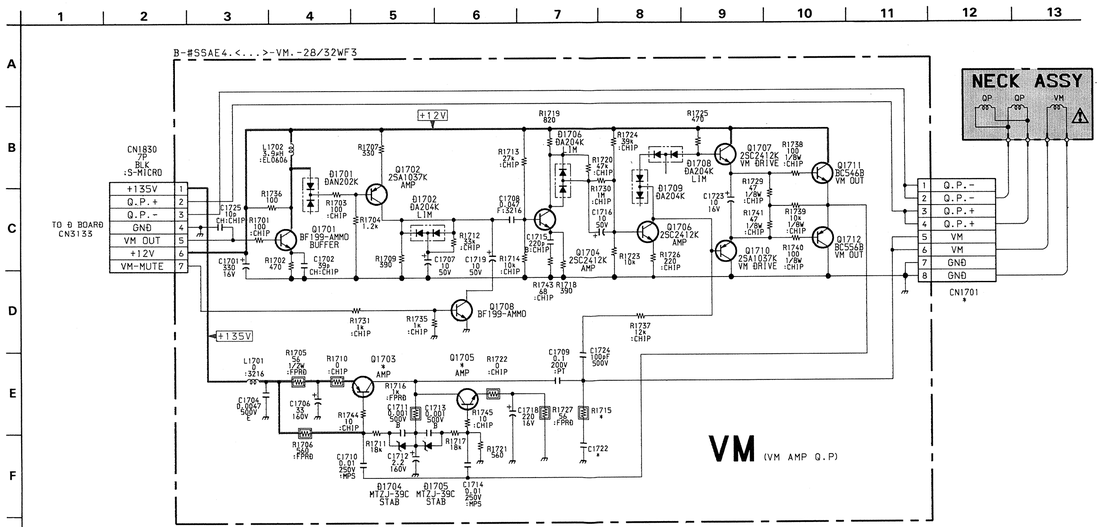
G BOARD

IC	
IC601	C - 3
IC602	D - 5
IC603	G - 7
TRANSISTOR	
Q601	A - 5
Q602	B - 2
Q603	B - 2
Q604	B - 2
Q605	C - 1
Q608	H - 8
Q610	B - 7
Q611	A - 8
Q612	B - 8
Q615	A - 6
Q621	H - 7
DIODE	
D601	E - 7
D602	H - 8
D603	H - 8
D605	H - 5
D607	E - 2
D608	F - 2
D609	G - 1
D610	H - 3
D611	E - 1
D614	A - 3
D615	A - 4
D616	A - 3
D617	A - 4
D618	B - 1
D619	B - 2
D620	B - 1
D621	B - 2
D622	A - 1
D623	D - 3
D625	A - 4
D626	A - 4
D627	B - 2
D628	B - 2
D629	D - 2
D630	D - 3
D633	G - 7
D634	H - 7
D636	G - 8

G [POWER SUPPLY]

G Board





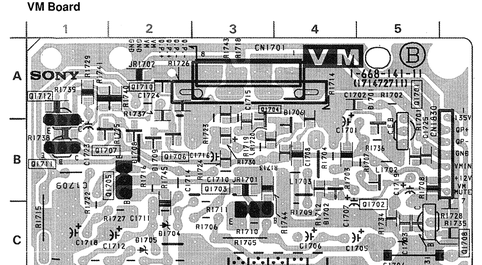
VM BOARD * MARK

Ref	28WF3A	28WF3B	28WF3D	28WF3E	28WF3K	32WF3A	32WF3B	32WF3D	32WF3E	32WF3K
C1722	100PF	100PF	100PF	100PF	100PF	JW 5.0MM	JW 5.0MM	JW 5.0MM	JW 5.0MM	JW 5.0MM
Q1703	2SA1837	2SA1837	2SA1837	2SA1837	2SA1837	-	-	-	-	-
Q1705	2SC4793	2SC4793	2SC4793	2SC4793	2SC4793	-	-	-	-	-
R1715	330	330	330	330	330	220	220	220	220	220

VM

[VM AMP, QP]

VM Board



VM BOARD
TRANSISTOR VOLTAGE TABLE

Transistor Voltage Table			
Ref No	(B) Base	(C) Collector	(E) Emitter
Q1701	0.8	0.7	2.1
Q1702	1.8	0.2	1.9
Q1703	24.0	13.3	24.0
Q1704	0.5	1.2	0.4
Q1705	0.1	12.3	-
Q1706	0.4	1.1	0.3
Q1707	1.5	2.1	1.4
Q1708	-	-	-
Q1710	1.1	-	1.2
Q1711	1.4	2.1	1.3
Q1712	1.3	1.2	-

VM BOARD

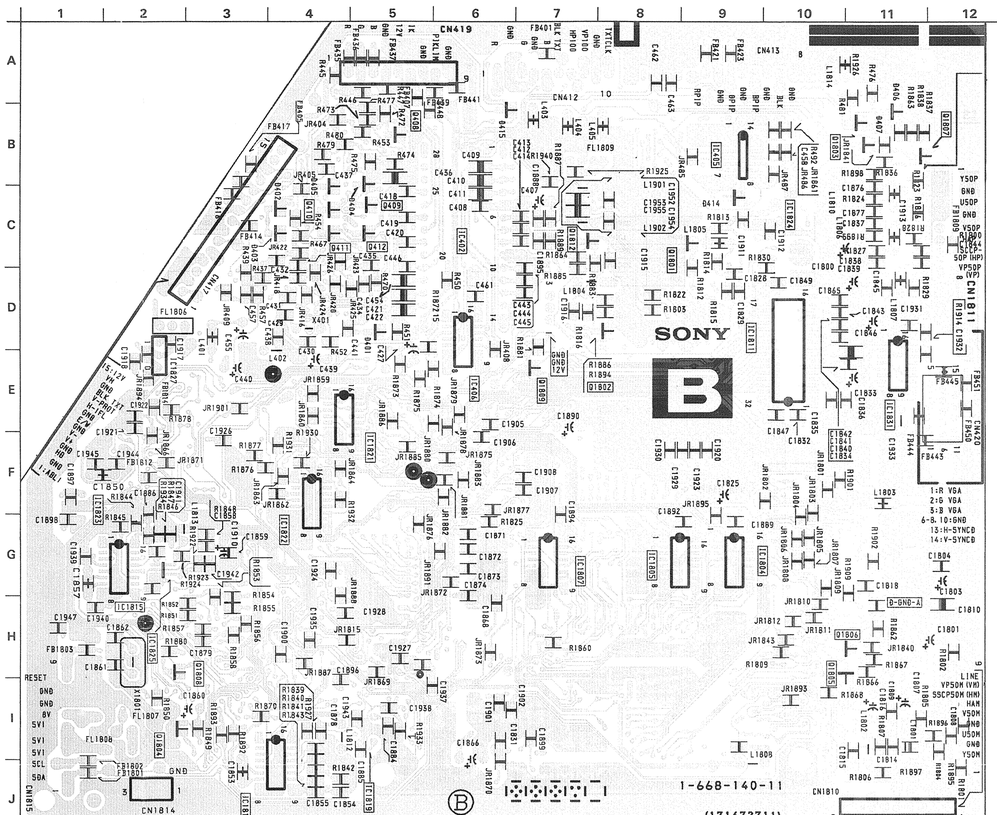
TRANSISTOR	
Q1701	A - 5
Q1702	C - 5
Q1703	B - 3
Q1705	B - 2
Q1706	B - 2
Q1707	B - 1
Q1708	C - 6
Q1710	A - 2
Q1711	B - 1
Q1712	A - 1
DIODE	
D1701	A - 5
D1702	C - 4
D1704	C - 2
D1705	C - 2
D1706	A - 4
D1708	B - 2
D1709	B - 2

B A/D, D/A CONVERTER, DIGITAL NOISE REDUCER, CRT DRIVER, DEFLECTION PROCESSOR

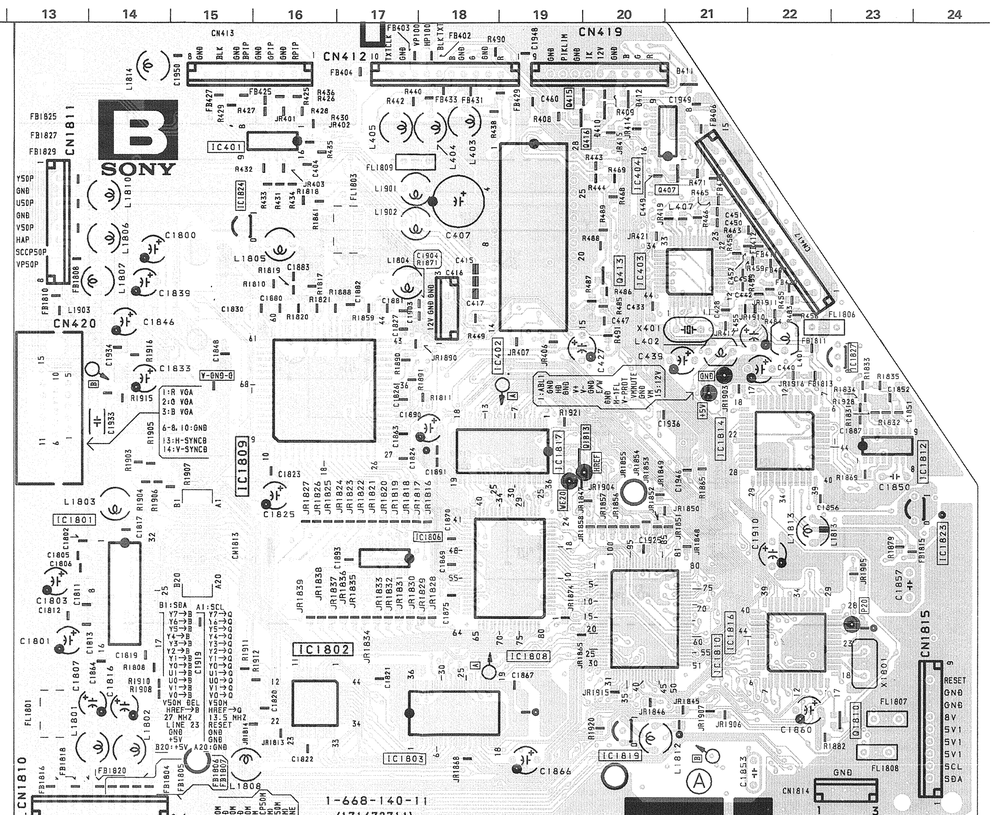
B BOARD

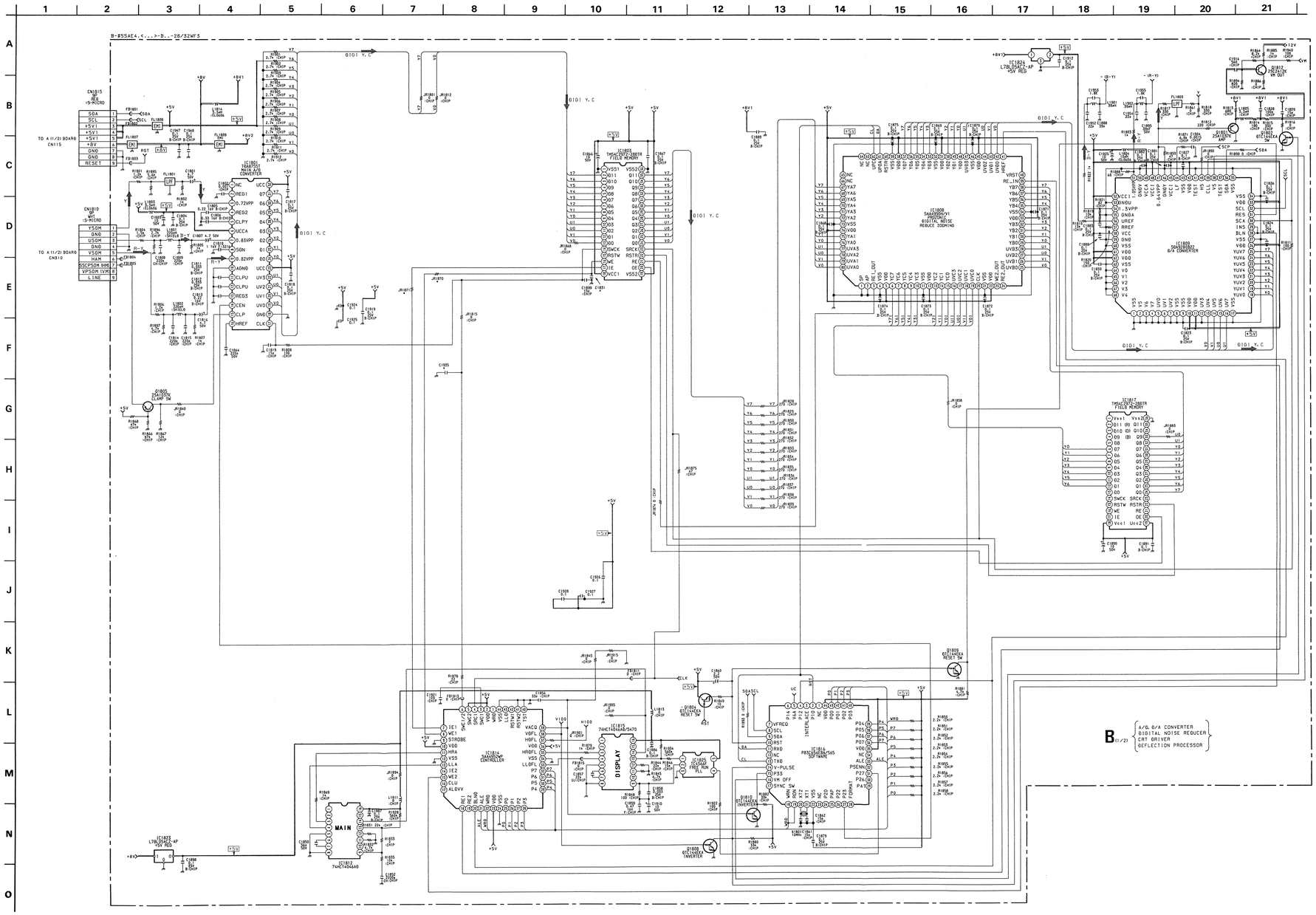
IC		TRANSISTOR	
IC402	C - 6	Q411	C - 4
IC403	D - 20	Q412	C - 5
IC405	B - 9	Q415	A - 19
IC406	E - 6	Q416	B - 20
IC1801	G - 13	Q1801	C - 8
IC1803	I - 17	Q1802	D - 8
IC1808	H - 19	Q1804	I - 2
IC1809	E - 15	Q1805	H -10
IC1810	I - 21	Q1808	H - 2
IC1812	F - 24	Q1809	E - 7
IC1814	F - 21	Q1810	I - 23
IC1815	H - 2	Q1812	C - 8
IC1816	H - 22		
IC1817	E - 19	**DIODE**	
IC1821	F - 5	D401	D - 5
IC1822	G - 4	D402	C - 3
IC1823	F - 1	D403	C - 3
IC1824	C - 10	D410	B - 20
IC1825	H - 2	D411	A - 21
		D412	A - 20
		D414	C - 9
		D415	B - 7

B Board < Conductor Side >



B Board < Component Side >





B BOARD * MARK

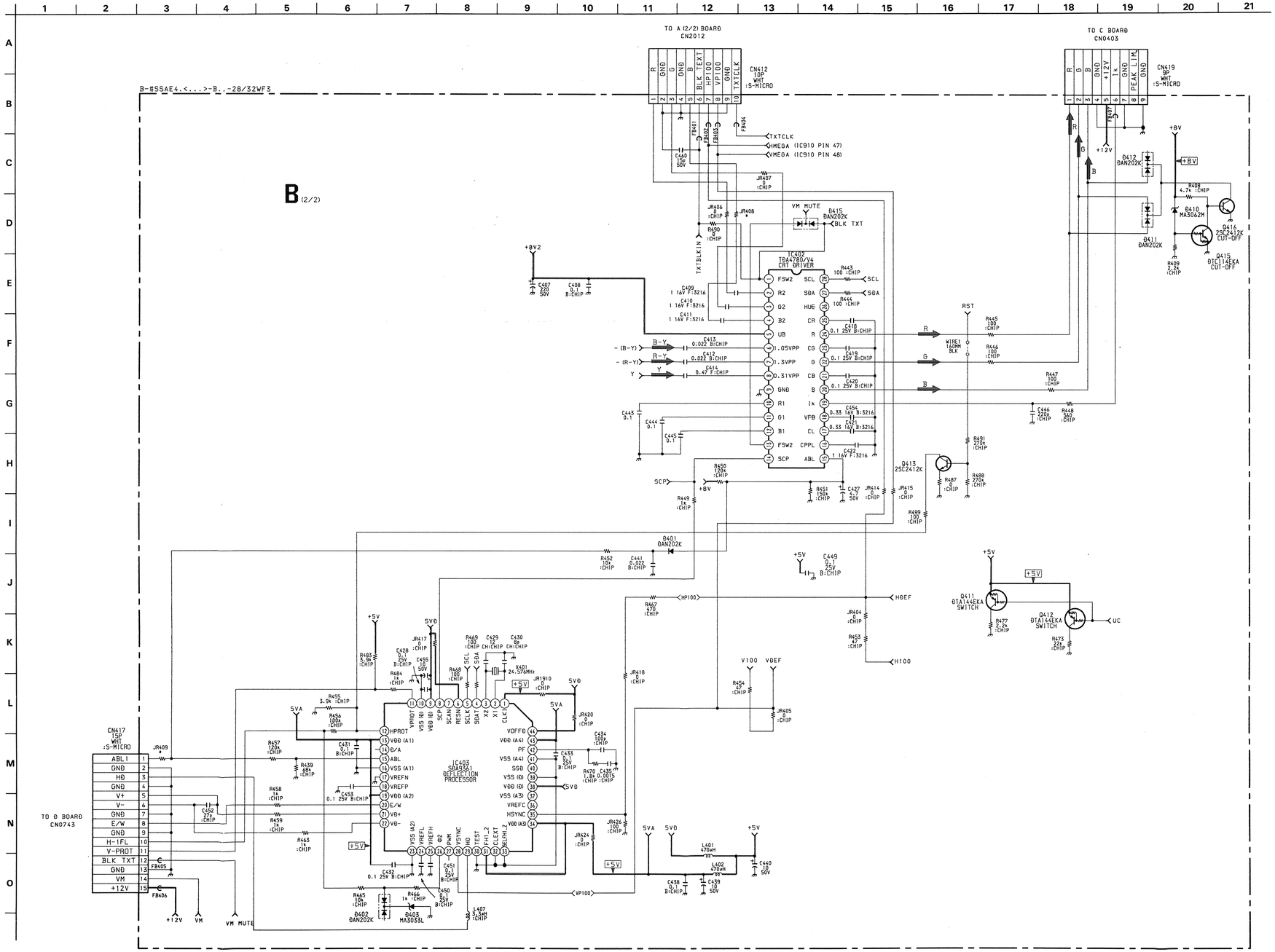
Ref	KV-28WF3A, KV-28WF3B, KV-28WF3D, KV-28WF3E, KV-28WF3K	KV-32WF3A, KV-32WF3B, KV-32WF3D, KV-32WF3E, KV-32WF3K
C442	0.1MF	-
C457	0.01MF	-
C1831	220PF	-
C1935	15PF	-
JR408	SHORT 0	-
JR409	1K	SHORT 0

B (1/2) BOARD IC VOLTAGE TABLE

IC Voltage Table		
Ref No	Pin No	Voltage (V)
IC1812	3 - 4	2.4
	6 - 7	0.7
	9	4.6
	11 - 13	4.7
	14	0.3
	16	5.0
IC1813	3 - 4	2.4
	6 - 7	0.7
	9	4.6
	11 - 13	4.7
	14	0.3
	16	5.0
IC1815	1	5.0
	2	2.3
	3 - 4	2.5
	6 - 7	0.8
	9 - 11	3.0
	12	4.5
	13	3.0
	14	0.4
	15	0.2
	16	5.2
IC1821	2	2.5
	4 - 5	2.3
	12	2.0
	14	2.0
	15	2.6
	16	8.0
IC1822	2	2.9
	4 - 5	2.6
	12	2.3
	14	2.1
	15	2.8
	16	8.0

B BOARD TRANSISTOR VOLTAGE TABLE

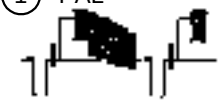
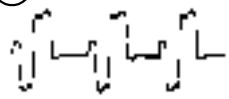
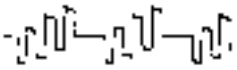
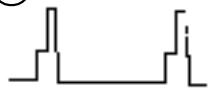
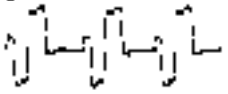
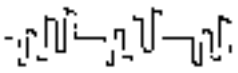
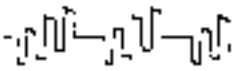
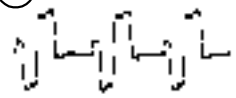
Transistor Voltage Table			
Ref No	(B) Base	(C) Collector	(E) Emitter
Q411	0.1	4.8	4.8
Q412	0.1	4.8	4.8
Q415	1.8	0.1	-
Q416	0.1	5.6	-
Q1801	0.1	-	0.9
Q1802	4.0	0.1	0.1
Q1804	0.3	4.8	0.1
Q1805	2.5	1.3	0.7
Q1807	2.5	1.3	0.7
Q1808	0.1	4.7	0.1
Q1809	0.1	0.1	0.1
Q1810	0.1	4.8	-
Q1812	0.5	10.5	-
Q1813	0.1	3.7	0.1



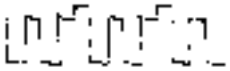
B (2/2) BOARD
IC VOLTAGE TABLE

IC Voltage Table		
Ref No	Pin No	Voltage (V)
IC402	2 - 4	5.0
	5	7.8
	6 - 7	4.0
	8	3.7
	10 - 12	5.0
	14	0.7
	16	4.7
	17	5.1
	18	1.8
	19	7.5
	20	2.5
	21	3.3
	22	2.8
	23	3.3
	24	2.9
	25	3.3
	27	4.0
	28	3.8
IC405	5	3.2
	9	3.2
	13 - 14	3.2
IC406	16	4.8

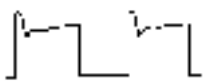
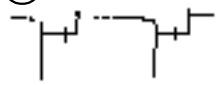
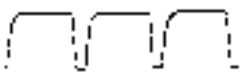
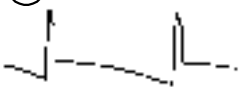
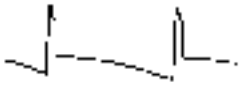
WAVEFORMS A BOARD

① PAL  1.0 Vp-p (H)	① SECAM 1.0 Vp-p (H)	② PAL 2.0 Vp-p (H)
② SECAM 2.0 Vp-p (H)	③ PAL 1.0 Vp-p (H)	③ SECAM 1.2 Vp-p (H)
④  0.6 Vp-p (H)	⑤  0.7 Vp-p (H)	⑥  4.5 Vp-p (H)
⑦ 1.0 Vp-p (H)	⑧  1.0 Vp-p (H)	⑨  1.4 Vp-p (H)
⑩  1.5 Vp-p (H)	⑪  1.0 Vp-p (H)	

WAVEFORMS C BOARD

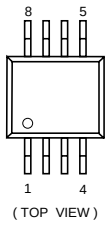
① 2.0 Vp-p (2H)	② 2.0 Vp-p (2H)	③ 2.0 Vp-p (2H)
④  107 Vp-p (2H)	⑤ 95 Vp-p (2H)	⑥ 100 Vp-p (2H)
⑦ 30 Vp-p (2H)		

WAVEFORMS D BOARD

① 3.5 Vp-p (2H)	②  210 Vp-p (2H)	③  11 Vp-p (2H)
④ 1.1K Vp-p (2H)	⑤  10 Vp-p (2H)	⑥  62 Vp-p (2H)
⑦  100 Vp-p (2H)		

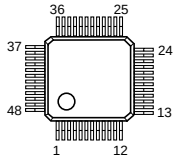
5-4 SEMICONDUCTORS

BA7046F
BA7046F-T1
MB3793-42NF
MB3793-42NF-ER
NJM2240M
NJM2240M(TE2)



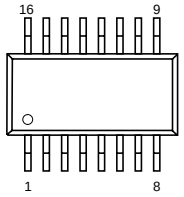
(TOP VIEW)

CXA1855Q-T6



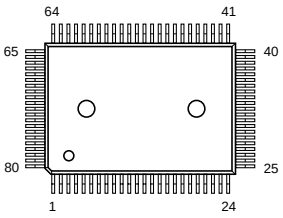
(TOP VIEW)

CXA1875AM-T4
HE4053BT
MC14052BDR2
MC74F157ADR2
SN74LS221D
74HCT4046AD/S470



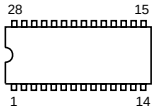
(TOP VIEW)

CXD2044Q-TL
SAA4990H/V2



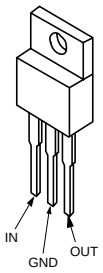
(MARKING SIDE VIEW)

CXD2053S
TDA4780/V3



(TOP VIEW)

LM2940CT-9.0
LM2940T-8.0
LM2940T-9.0
L4941BV
TEA7605



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M5216P
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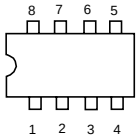
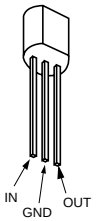
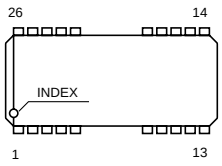
TDA2822M
UPC393C



LM78L05ACZ
LM78L12ACZ
L78L05ACZ-AP
L78L12ACZ-AP

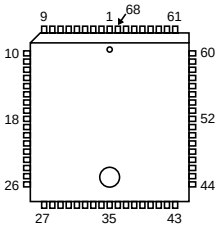


MB814400C-70PJN-ER



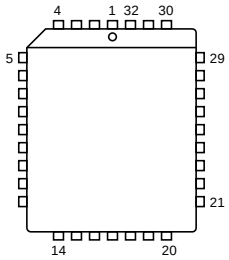
(TOP VIEW)

MSP3400C-PS-C6-T
MSP3410B-PS-F7-T-ND
SAA7185WP
SDA30C164-2-GEG
SDA5275



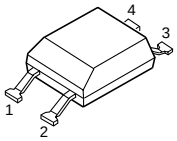
(TOP VIEW)

M27C4001-15C1-AE406
M27C4001-15C1

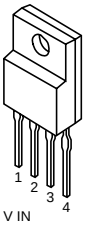


(TOP VIEW)

PC123F2
PC123FY2

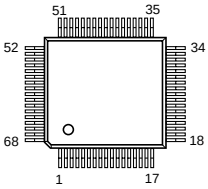


PQ05RF21



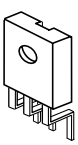
1 : V IN
2 : V OUT
3 : GND
4 : ON/OFF CONTROL

P83C654EBA/565
SDA9280A41

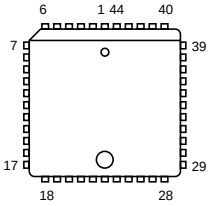


(TOP VIEW)

SBX1981-51

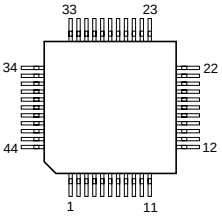


SAA4952WP/V1

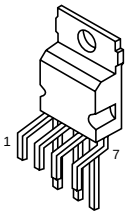


(TOP VIEW)

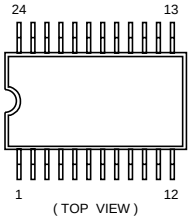
SDA9361



STV9379

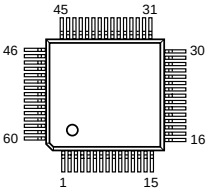


TC9293F-EL



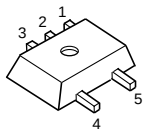
(TOP VIEW)

TC9337F-015

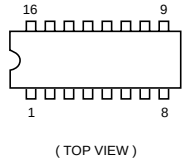


(MARKING SIDE VIEW)

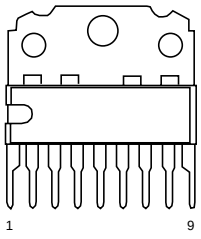
TC4S66F
TC4S66F-TE85L



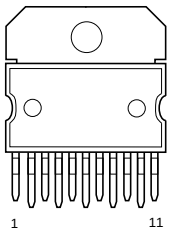
TDA4665T-T



TDA6111Q
TDA6111Q/N4



TDA7265



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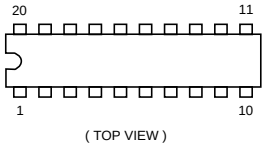

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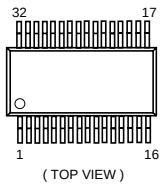

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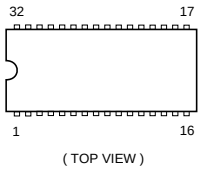

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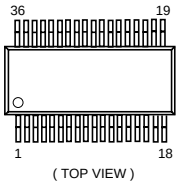

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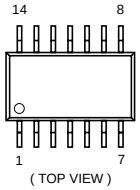

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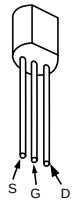

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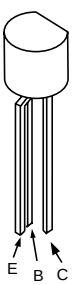

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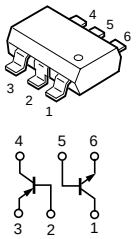

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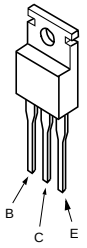

DTA144EK
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DTC114EK
DTC114EKA-T146
DTC123EK
DTC123EK-T146
DTC124EKA-T146

DTC144EK
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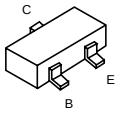
2SA1162-G
2SC2412K-QR
2SC2412K-T-146-R



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DTC144ESA-TP
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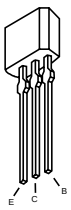

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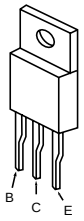

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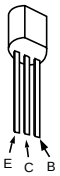
2SC2551-O
2SC2551O-TPE2



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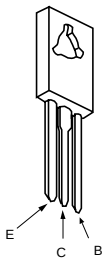

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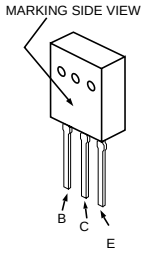

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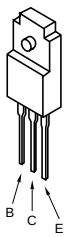

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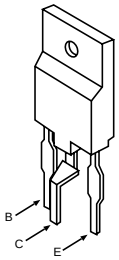

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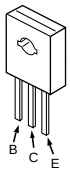

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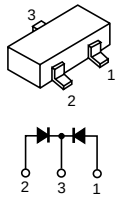

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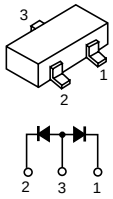

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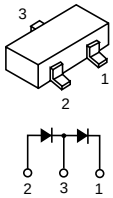

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EL1Z
GP08D
GP08DPKG23
MTZJ-T-77-9.1
MTZJ-T-77-9.1A
R2K-V1
RGP02-20EG23
RGP02-20EL-6394
RGP10GPKG23
RGP15GPKG23
S2LA20F
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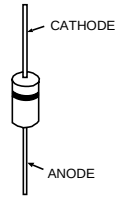
1SS83
1SS83TD



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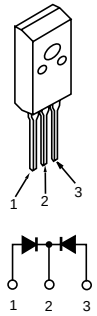

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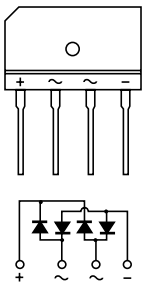

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MTZJ-T-77-2.2A
MTZJ-T-77-33C
MTZJ-T-77-39C
MTZJ-T-77-5.6B
MTZJ-T-77-8.2B
MTZJ-T-77-9.1B
MTZJ-13B
MTZJ-33C
MTZJ-39C
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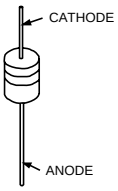
RD5.6ESB2
RD8.2ES-B2
RD9.1ESB2
1SS119-25
1SS119-25TD



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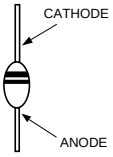

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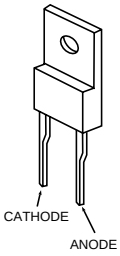

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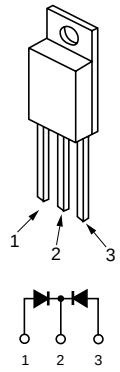

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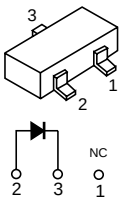
MA3056M-TX
MA3062M-TX
MA3030-H-(TX)
RD5.6M-B2



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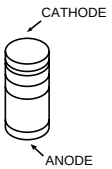
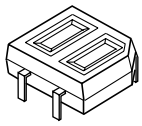


MA73-TX



RD12SB2
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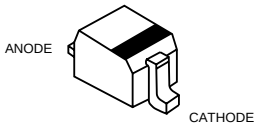

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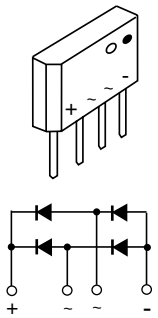

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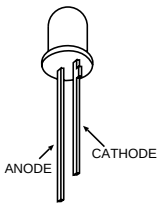
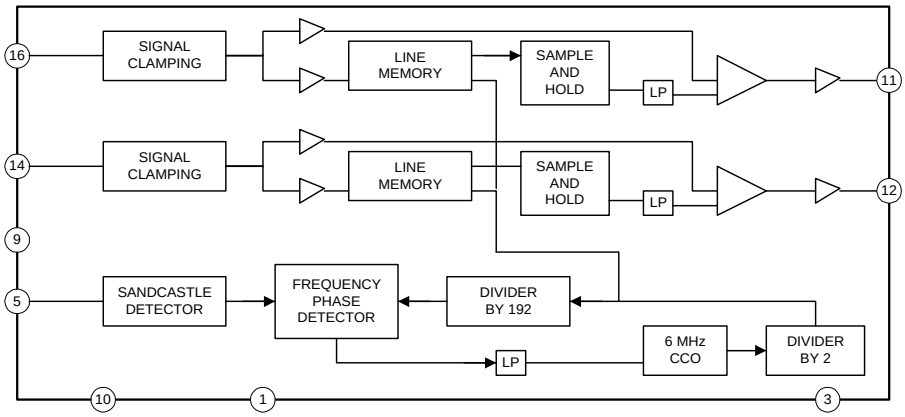
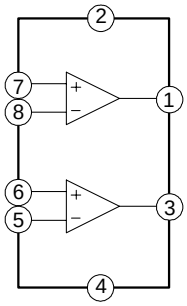


5-5. IC BLOCK DIAGRAMS

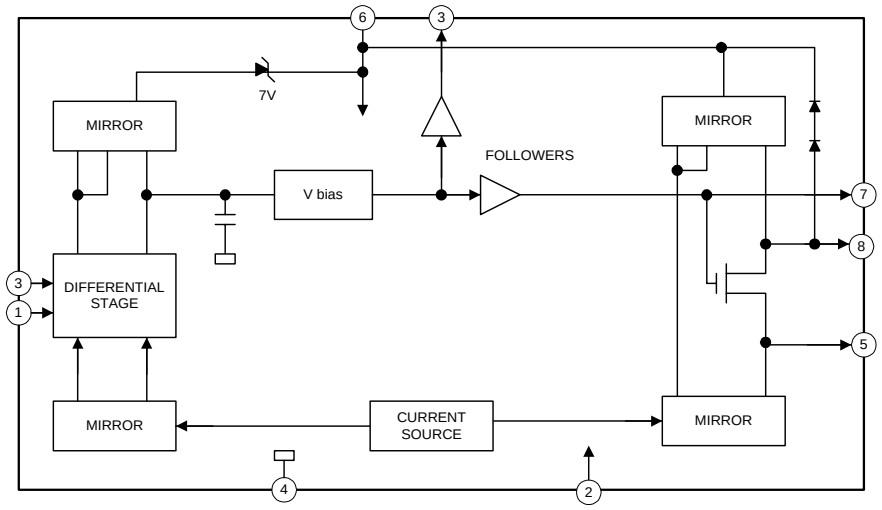
A Board IC303, TDA4665T-T



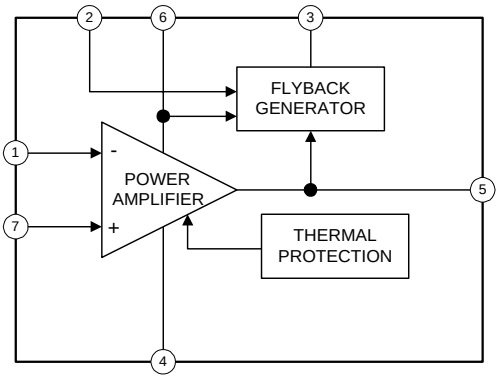
D Board IC261 TDA2822M



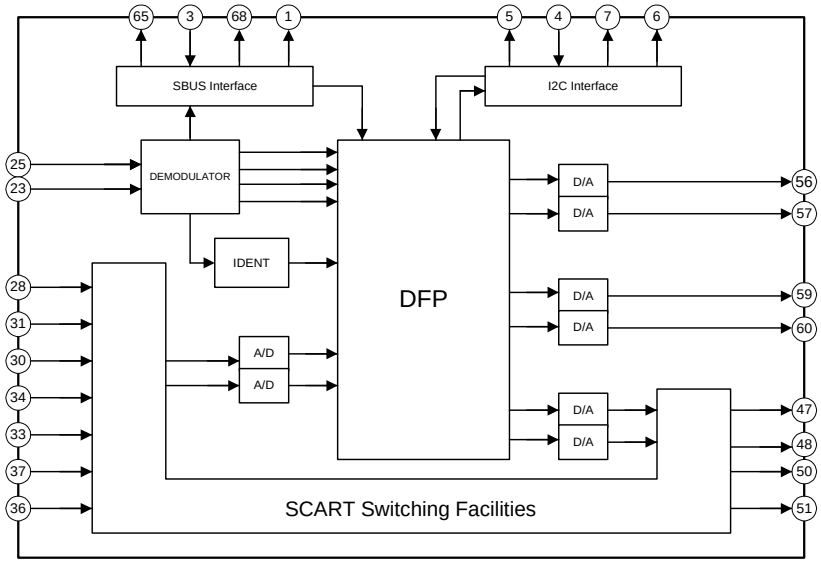
C Board IC703,704,705 TDA6111Q/N4



D Board IC802 STV9379



A Board IC201 MSP3400C-PS-C6-T/MSP3410B-PS-F7-T



SECTION 6
EXPLODED VIEWS

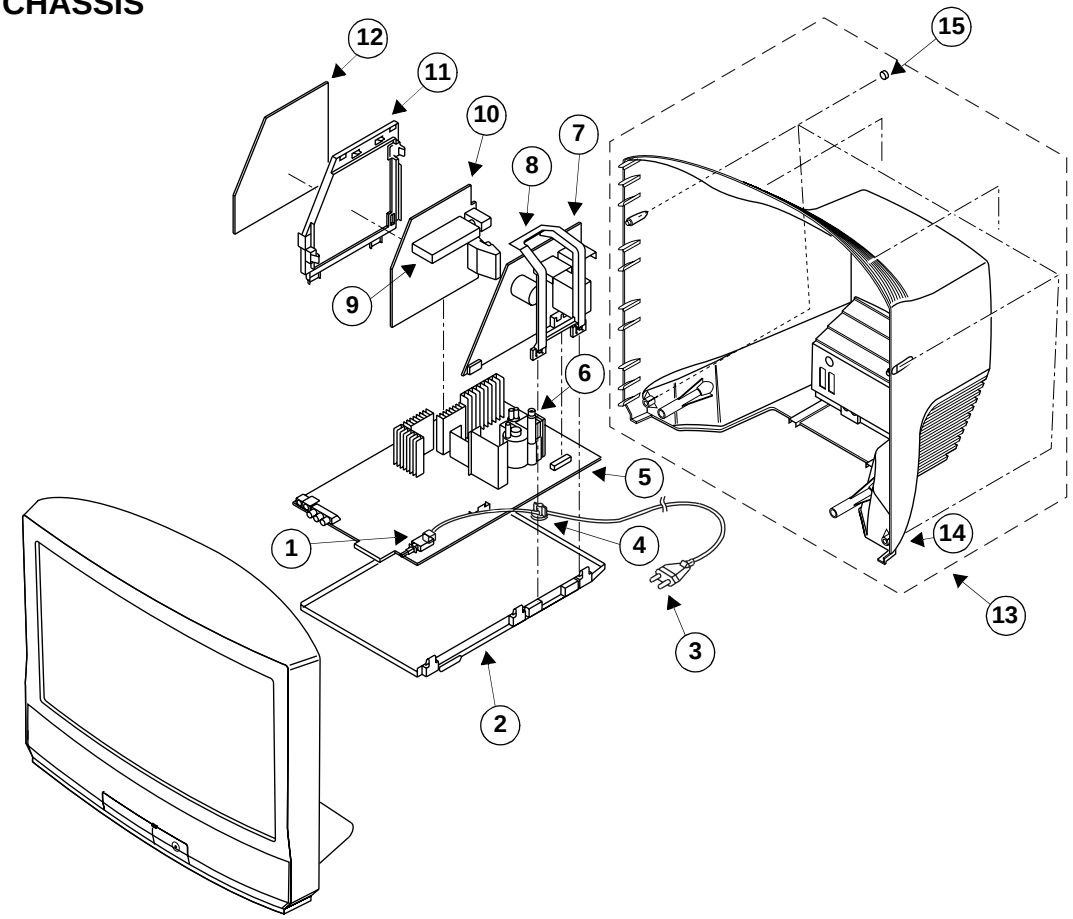
Note : Les composants indentifies par une trame et par une marque ⚠ sonte d'une importance critique pour la securite. Ne les remplacer que par des pieces du numero specifie.

Note : The components identified by shading and marked ⚠ are critical for safety. Replace only with the part numbers specified in the parts list.

NOTE :

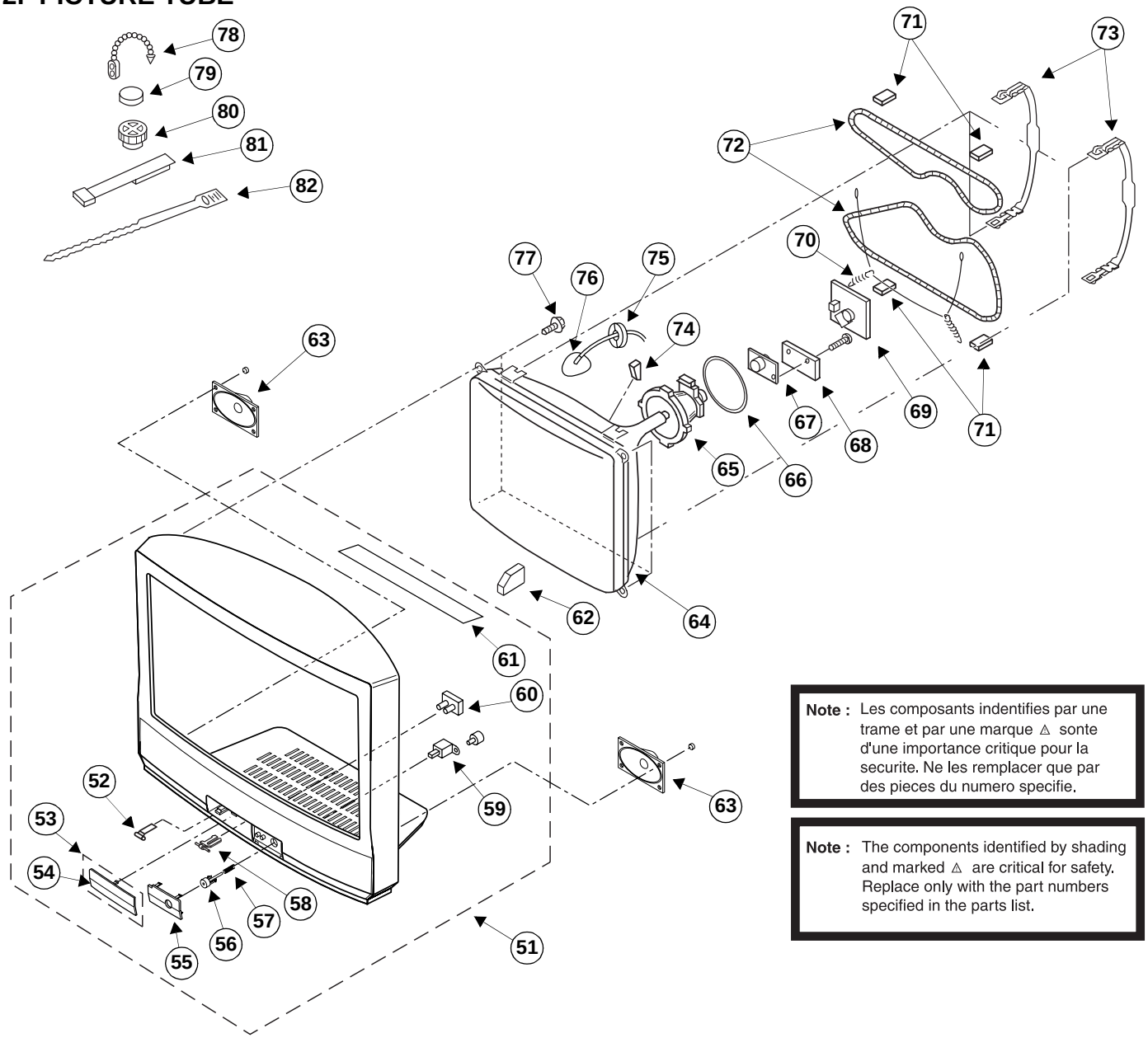
- Items with no part number and no description are not stocked because they are seldom required for routine service.
- The construction parts of an assembled part are indicated with a collation number in the remarks column.
- Items marked " * " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

6-1. CHASSIS



REF. NO.		PART.NO	DESCRIPTION	REMARK
1	⚠	1-571-433-21	SWITCH, PUSH (AC POWER)	
2		*4-203-457-01	BRACKET, MAIN	
3	⚠	1-765-286-11	CORD, POWER	
4		*4-202-531-01	AC CORD LOCK (AC)	
5		*A-1640-244-A	D BOARD, COMPLETE (KV-28WF3A/28WF3B/28WF3D/28WF3E/28WF3K)	
		*A-1640-305-A	D BOARD, COMPLETE (KV-32WF3A/32WF3B/32WF3D/32WF3E/32WF3K)	
6	⚠	1-453-222-11	TRANSFORMER ASSY, FLYBACK (NX-4003/U2B4) (KV-28WF3A/28WF3B/28WFD3/28WF3E/28WF3K)	
	⚠	1-453-223-11	TRANSFORMER ASSY, FLYBACK (NX-4123/U2B4) (KV-32WF3A/32WF3B/32WF3D/32WF3E/32WF3K)	
7		*A-1636-030-A	G BOARD, COMPLETE (KV-28WF3A/28WF3B/28WF3D/28WF3E/28WF3K)	
		*A-1636-031-A	G BOARD, COMPLETE (KV-32WF3A/32WF3B/32WF3D/32WF3E/32WF3K)	
8		*4-203-613-01	SUPPORTER G	
9		1-693-338-11	TUNER (VIF) (AEP) (KV-28WF3A/28WF3D/28WF3E/28WF3K/ 32WF3A/32WF3D/32WF3E/32WF3K)	
		1-693-340-11	TUNER (VIF) (FR) (KV-28WF3B/32WF3B)	
10		*A-1632-777-A	A BOARD, COMPLETE (KV-28WF3A)	
		*A-1632-776-A	A BOARD, COMPLETE (KV-28WF3B)	
		*A-1632-724-A	A BOARD, COMPLETE (KV-28WF3D)	
		*A-1632-778-A	A BOARD, COMPLETE (KV-28WF3E)	
		*A-1632-779-A	A BOARD, COMPLETE (KV-28WF3K)	
		*A-1632-722-A	A BOARD, COMPLETE (KV-32WF3A)	
		*A-1632-773-A	A BOARD, COMPLETE (KV-32WF3B)	
		*A-1632-724-A	A BOARD, COMPLETE (KV-32WF3D)	
		*A-1632-774-A	A BOARD, COMPLETE (KV-32WF3E)	
		*A-1632-775-A	A BOARD, COMPLETE (KV-32WF3K)	
11		*4-203-612-01	BRACKET, A-B	
12		*A-1620-107-A	B BOARD, COMPLETE (KV-28WF3A/28WF3B/28WF3D/28WF3E/28WF3K)	
		*A-1620-108-A	B BOARD, COMPLETE (KV-32WF3A/32WF3B/32WF3D/32WF3E/32WF3K)	
13		X-4200-384-1	COVER ASSY, REAR (KV-32WF3A/32WF3B/32WF3D/32WF3E/32WF3K)	
14		4-203-775-01	COVER, REAR (KV-28WF3A/28WF3B/28WF3D/28WF3E/28WF3K)	
		4-203-754-01	COVER, REAR (KV-32WF3A/32WF3B/32WF3D/32WF3E/32WF3K)	
15		4-039-358-01	SCREW (4X16), (+) BV TAPPING	

6-2. PICTURE TUBE



Note : Les composants indentifies par une trame et par une marque △ sonte d'une importance critique pour la securite. Ne les remplacer que par des pieces du numero specifie.

Note : The components identified by shading and marked △ are critical for safety. Replace only with the part numbers specified in the parts list.

REF. NO.	PART.NO	DESCRIPTION	REMARK
51	X-4200-344-1	BEZNET ASSY	52-61
		(KV-28WF3A/28WF3B/28WF3D/28WF3E/28WF3K)	
	X-4200-343-1	BEZNET ASSY	
		(KV-32WF3A/32WF3B/32WF3D/32WF3E/32WF3K)	
52	4-045-250-01	DAMPER	
53	X-4200-369-1	DOOR, ASSY	
		(KV-28WF3A/28WF3B/28WF3D/28WF3E/28WF3K)	
54	4-203-723-01	DOOR	
		(KV-28WF3A/28WF3B/28WF3D/28WF3E/28WF3K)	
	4-203-723-21	DOOR	
		(KV-32WF3A/32WF3B/32WF3D/32WF3E/32WF3K)	
55	4-203-724-01	WINDOW, ORNAMENTAL	
56	4-203-722-02	BUTTON, POWER	
		(KV-28WF3A/28WF3B/28WF3D/28WF3E/28WF3K)	

REF. NO.	PART.NO	DESCRIPTION	REMARK
	4-203-722-11	BUTTON, POWER	
		(KV-32WF3A/32WF3B/32WF3D/32WF3E/32WF3K)	
57	4-202-964-01	SPRING	
		(KV-28WF3A/28WF3B/28WF3D/28WF3E/28WF3K)	
	4-202-964-11	SPRING	
		(KV-32WF3A/32WF3B/32WF3D/32WF3E/32WF3K)	
58	3-703-035-11	SHAFT, LID	
		(KV-28WF3A/28WF3B/28WF3D/28WF3E/28WF3K)	
	4-202-555-01	SHAFT, DOOR	
		(KV-32WF3A/32WF3B/32WF3D/32WF3E/32WF3K)	
59	4-042-940-21	UNIT, LOCK	
60	4-203-739-01	GUIDE, LIGHT	
		(KV-28WF3A/28WF3B/28WF3D/28WF3E/28WF3K)	
	4-203-739-11	GUIDE, LIGHT	
		(KV-32WF3A/32WF3B/32WF3D/32WF3E/32WF3K)	

The components identified by shading and marked ⚠ are critical for safety
Replace only with the part number specified.

REF. NO.		PART.NO	DESCRIPTION	REMARK
61		*4-203-128-11	SHEET BLOTTING	
62		4-203-870-01	SUPPORTER, CRT (KV-28WF3A/28WF3B/28WF3D/28WF3E/28WF3K)	
		4-203-098-01	SUPPORTER, CRT (KV-32WF3A/32WF3B/32WF3D/32WF3E/32WF3K)	
63		1-505-782-11	SPEAKER (7X13CM)	
64	⚠	8-737-781-05	PICTURE TUBE (SD-284T) (W66LGY060X) (KV-28WF3A/28WF3B/28WF3D/28WF3E/28WF3K)	
	⚠	8-735-037-05	PICTURE TUBE (SD-297) (W76LHT060X) (KV-32WF3A/32WF3B/32WF3D/32WF3E/32WF3K)	
65	⚠	8-451-433-11	DEFLECTION YOKE (Y28GICM) (KV-28WF3A/28WF3B/28WF3D/28WF3E/28WF3K)	
	⚠	8-451-485-11	DEFLECTION YOKE (Y32C2C2-M) (KV-32WF3A/32WF3B/32WF3D/32WF3E/32WF3K)	
66		1-452-724-11	COIL, NA ROTATION (RT-165)	
67	⚠	8-453-005-31	NECK ASSY, NA297-M3 (KV-28WF3A/28WF3B/28WF3D/28WF3E/28WF3K)	
	⚠	8-453-011-11	NECK ASSY, NA299-M (KV-32WF3A/32WF3B/32WF3D/32WF3E/32WF3K)	
68		*A-1644-084-A	VM BOARD, COMPLETE (KV-28WF3A/28WF3B/28WF3D/28WF3E/28WF3K)	
		*A-1644-089-A	VM BOARD, COMPLETE (KV-32WF3A/32WF3B/32WF3D/32WF3E/32WF3K)	
69		*A-1638-092-A	C BOARD, COMPLETE	
70		4-369-318-31	SPRING, TENSION (KV-28WF3A/28WF3B/28WF3D/28WF3E/28WF3K)	
		4-200-433-01	SPRING, EXTENSION (KV-32WF3A/32WF3B/32WF3D/32WF3E/32WF3K)	
71		*4-203-390-01	CUSHION, DGC	
72	⚠	1-411-893-11	COIL, DEMAGNETIC (KV-28WF3A/28WF3B/28WF3D/28WF3E/28WF3K)	
	⚠	1-416-450-11	COIL, DEMAGNETIC (KV-32WF3A/32WF3B/32WF3D/32WF3E/32WF3K)	
73		4-203-769-01	DGC HOLDER (28″) (KV-28WF3A/28WF3B/28WF3D/28WF3E/28WF3K)	
		4-045-294-01	HOLDER, DGC (KV-32WF3A/32WF3B/32WF3D/32WF3E/32WF3K)	
74		3-704-495-01	SPACER, DY	
75		4-200-693-01	HOLDER, HV CABLE (KV-28WF3A/28WF3B/28WF3D/28WF3E/28WF3K)	
		4-203-022-01	HOLDER, HV CABLE (KV-32WF3A/32WF3B/32WF3D/32WF3E/32WF3K)	
76	⚠	1-251-317-31	CAP, ASSY HIGH VOLTAGE	
77		4-203-216-01	PT-SCREW (KV-32WF3A/32WF3B/32WF3D/32WF3E/32WF3K)	
78		4-308-870-00	CLIP, LEAD WIRE	
79		1-425-032-00	MAGNET, DISK; 10MM Ø	
80		1-452-094-00	MAGNET, ROTATABLE DISK; 15MM Ø	
81		X-4387-214-1	PERMALLOY ASSY, CORRECTION	
82		3-701-007-00	BAND BINDING	

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SECTION 7
ELECTRICAL PARTS LIST

When indicating parts by reference number, please include the board name.

CAPACITORS MF : mF, PF : mmF

COILS MMH : mH , uH

- Items marked " * " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
- RESISTORS
- All resistors are in ohms.
- F : nonflammable.

Note : Les composants indentifies par une trame et par une marque ⚠ sonte d'une importance critique pour la securite. Ne les remplacer que par des pieces du numero specifie.

Note : The components identified by shading and marked ⚠ are critical for safety. Replace only with the part numbers specified in the parts list.

B

REF. NO.	PART.NO	DESCRIPTION	REMARK
	*A-1620-107-A	B BOARD COMPLETE (KV-28WF3A/28WF3B/28WF3D/	
		********** KV-28WF3E/28WF3K)	
	*A-1620-108-A	B BOARD COMPLETE (KV-32WF3A/32WF3B/32WF3D/	
		********** KV-32WF3E/32WF3K)	
		< CAPACITOR >	
C407	1-126-969-11	ELECT 220MF 20%	50V
C408	1-164-004-11	CERAMIC CHIP 0.1MF 10%	25V
C409	1-162-638-11	CERAMIC CHIP 1MF	16V
C410	1-162-638-11	CERAMIC CHIP 1MF	16V
C411	1-162-638-11	CERAMIC CHIP 1MF	16V
C412	1-163-037-11	CERAMIC CHIP 0.022MF 10%	50V
C413	1-163-037-11	CERAMIC CHIP 0.022MF 10%	50V
C414	1-164-005-11	CERAMIC CHIP 0.47MF	25V
C418	1-164-004-11	CERAMIC CHIP 0.1MF 10%	25V
C419	1-164-004-11	CERAMIC CHIP 0.1MF 10%	25V
C420	1-164-004-11	CERAMIC CHIP 0.1MF 10%	25V
C421	1-162-568-11	CERAMIC CHIP 0.33MF 10%	16V
C422	1-162-638-11	CERAMIC CHIP 1MF	16V
C427	1-126-963-11	ELECT 4.7MF 20%	50V
C428	1-164-004-11	CERAMIC CHIP 0.1MF 10%	25V
C429	1-163-229-11	CERAMIC CHIP 12PF 5%	50V
C430	1-163-091-00	CERAMIC CHIP 8PF 0.25PF	50V
C431	1-164-004-11	CERAMIC CHIP 0.1MF 10%	25V
C432	1-164-004-11	CERAMIC CHIP 0.1MF 10%	25V
C433	1-164-004-11	CERAMIC CHIP 0.1MF 10%	25V
C434	1-163-117-00	CERAMIC CHIP 100PF 5%	50V
C435	1-163-145-00	CERAMIC CHIP 0.0015MF 5%	50V
C438	1-164-004-11	CERAMIC CHIP 0.1MF 10%	25V
C439	1-126-964-11	ELECT 10MF 20%	50V
C440	1-126-964-11	ELECT 10MF 20%	50V
C441	1-163-037-11	CERAMIC CHIP 0.022MF 10%	50V
C443	1-164-004-11	CERAMIC CHIP 0.1MF 10%	25V
C444	1-164-004-11	CERAMIC CHIP 0.1MF 10%	25V
C445	1-164-004-11	CERAMIC CHIP 0.1MF 10%	25V
C446	1-163-125-00	CERAMIC CHIP 220PF 5%	50V
C449	1-164-004-11	CERAMIC CHIP 0.1MF 10%	25V
C450	1-164-004-11	CERAMIC CHIP 0.1MF 10%	25V
C451	1-164-004-11	CERAMIC CHIP 0.1MF 10%	25V
C452	1-163-103-00	CERAMIC CHIP 27PF 5%	50V
C453	1-164-004-11	CERAMIC CHIP 0.1MF 10%	25V
C454	1-162-568-11	CERAMIC CHIP 0.33MF 10%	16V
C455	1-126-964-11	ELECT 10MF 20%	50V
C460	1-163-097-00	CERAMIC CHIP 15PF 5%	50V
C1801	1-126-963-11	ELECT 4.7MF 20%	50V
C1802	1-163-141-00	CERAMIC CHIP 0.001MF 5%	50V
C1803	1-126-964-11	ELECT 10MF 20%	50V
C1804	1-164-004-11	CERAMIC CHIP 0.1MF 10%	25V
C1805	1-164-489-11	CERAMIC CHIP 0.22MF 10%	16V
C1806	1-110-501-11	CERAMIC CHIP 0.33MF 10%	16V
C1807	1-126-963-11	ELECT 4.7MF 20%	50V
C1808	1-163-259-91	CERAMIC CHIP 220PF 5%	50V
C1809	1-163-125-00	CERAMIC CHIP 220PF 5%	50V
C1810	1-162-638-11	CERAMIC CHIP 1MF	16V
C1811	1-163-989-11	CERAMIC CHIP 0.033MF 10%	25V
C1812	1-163-989-11	CERAMIC CHIP 0.033MF 10%	25V
C1813	1-164-489-11	CERAMIC CHIP 0.22MF 10%	16V
C1814	1-163-125-00	CERAMIC CHIP 220PF 5%	50V
C1815	1-163-125-00	CERAMIC CHIP 220PF 5%	50V
C1816	1-126-963-11	ELECT 4.7MF 20%	50V
C1817	1-164-004-11	CERAMIC CHIP 0.1MF 10%	25V
C1818	1-164-004-11	CERAMIC CHIP 0.1MF 10%	25V
C1819	1-163-097-00	CERAMIC CHIP 15PF 5%	50V
C1823	1-164-004-11	CERAMIC CHIP 0.1MF 10%	25V
C1824	1-164-004-11	CERAMIC CHIP 0.1MF 10%	25V
C1825	1-126-964-11	ELECT 10MF 20%	50V
C1826	1-164-004-11	CERAMIC CHIP 0.1MF 10%	25V
C1827	1-164-004-11	CERAMIC CHIP 0.1MF 10%	25V
C1828	1-163-117-00	CERAMIC CHIP 100PF 5%	50V
C1829	1-163-097-00	CERAMIC CHIP 15PF 5%	50V
C1830	1-164-004-11	CERAMIC CHIP 0.1MF 10%	25V
C1831	1-163-125-00	CERAMIC CHIP 220PF 5%	50V
		(KV-28WF3A/28WF3B/28WF3D/28WF3E/28WF3K)	
C1850	1-163-245-11	CERAMIC CHIP 56PF 5%	50V
C1852	1-164-695-11	CERAMIC CHIP 0.0022MF 5%	50V
C1856	1-163-105-00	CERAMIC CHIP 33PF 5%	50V
C1857	1-163-101-00	CERAMIC CHIP 22PF 5%	50V
C1858	1-163-989-11	CERAMIC CHIP 0.033MF 10%	25V
C1859	1-164-005-11	CERAMIC CHIP 0.47MF	16V
C1860	1-126-961-11	ELECT 2.2MF 20%	50V
C1861	1-163-097-00	CERAMIC CHIP 15PF 5%	50V
C1862	1-163-097-00	CERAMIC CHIP 15PF 5%	50V
C1864	1-163-125-00	CERAMIC CHIP 220PF 5%	50V
C1866	1-126-964-11	ELECT 10MF 20%	50V

REF. NO.	PART.NO	DESCRIPTION	REMARK
C1867	1-164-004-11	CERAMIC CHIP 0.1MF	10% 25V
C1868	1-164-004-11	CERAMIC CHIP 0.1MF	10% 25V
C1869	1-164-004-11	CERAMIC CHIP 0.1MF	10% 25V
C1870	1-164-004-11	CERAMIC CHIP 0.1MF	10% 25V
C1871	1-164-004-11	CERAMIC CHIP 0.1MF	10% 25V
C1872	1-164-004-11	CERAMIC CHIP 0.1MF	10% 25V
C1873	1-164-004-11	CERAMIC CHIP 0.1MF	10% 25V
C1874	1-164-004-11	CERAMIC CHIP 0.1MF	10% 25V
C1875	1-164-004-11	CERAMIC CHIP 0.1MF	10% 25V
C1879	1-164-004-11	CERAMIC CHIP 0.1MF	10% 25V
C1880	1-164-004-11	CERAMIC CHIP 0.1MF	10% 25V
C1881	1-164-004-11	CERAMIC CHIP 0.1MF	10% 25V
C1882	1-164-004-11	CERAMIC CHIP 0.1MF	10% 25V
C1883	1-164-004-11	CERAMIC CHIP 0.1MF	10% 25V
C1886	1-164-004-11	CERAMIC CHIP 0.1MF	10% 25V
C1887	1-164-004-11	CERAMIC CHIP 0.1MF	10% 25V
C1888	1-163-241-11	CERAMIC CHIP 39PF	5% 50V
C1889	1-164-004-11	CERAMIC CHIP 0.1MF	10% 25V
C1890	1-126-964-11	ELECT 10MF	20% 50V
C1891	1-164-004-11	CERAMIC CHIP 0.1MF	10% 25V
C1895	1-163-241-11	CERAMIC CHIP 39PF	5% 50V
C1898	1-164-004-11	CERAMIC CHIP 0.1MF	10% 25V
C1899	1-163-097-00	CERAMIC CHIP 15PF	5% 50V
C1904	1-163-145-00	CERAMIC CHIP 0.0015MF	5% 50V
C1910	1-126-964-11	ELECT 10MF	20% 50V
C1912	1-164-004-11	CERAMIC CHIP 0.1MF	10% 25V
C1916	1-216-043-91	RES,CHIP 560	5% 1/10W
C1919	1-164-004-11	CERAMIC CHIP 0.1MF	10% 25V
C1921	1-216-027-00	RES,CHIP 120	5% 1/10W
C1924	1-164-004-11	CERAMIC CHIP 0.1MF	10% 25V
C1925	1-164-004-11	CERAMIC CHIP 0.1MF	10% 25V
C1926	1-164-004-11	CERAMIC CHIP 0.1MF	10% 25V
C1927	1-164-004-11	CERAMIC CHIP 0.1MF	10% 25V
C1928	1-164-004-11	CERAMIC CHIP 0.1MF	10% 25V
C1935	1-163-097-00	CERAMIC CHIP 15P	5% 50V
		(KV-28WF3A/28WF3B/28WF3D/28WF3E/28WF3K)	
C1947	1-164-004-11	CERAMIC CHIP 0.1MF	10% 25V
C1948	1-164-004-11	CERAMIC CHIP 0.1MF	10% 25V
C1952	1-163-235-11	CERAMIC CHIP 22PF	5% 50V
C1953	1-216-204-00	RES,CHIP 1.8K	5% 1/8W
C1954	1-163-235-11	CERAMIC CHIP 22PF	5% 50V
C1955	1-216-204-00	RES,CHIP 1.8K	5% 1/8W
		< CONNECTOR >	
CN412	1-564-513-11	PLUG, CONNECTOR 10P	
CN417	*1-564-596-11	PLUG, CONNECTOR 15P	
CN419	*1-564-512-11	PLUG, CONNECTOR 9P	
CN1810	*1-564-512-11	PLUG, CONNECTOR 9P	
CN1815	*1-564-512-11	PLUG, CONNECTOR 9P	
		< DIODE >	
D401	8-719-914-43	DIODE DAN202K	
D402	8-719-914-43	DIODE DAN202K	
D403	8-719-028-00	DIODE MA3033-L	
D410	8-719-401-63	DIODE MA3062M-TX	
D411	8-719-914-43	DIODE DAN202K	
D412	8-719-914-43	DIODE DAN202K	
D415	8-719-914-43	DIODE DAN202K	
		< FERRITE BEAD >	
FB401	1-414-234-11	INDUCTOR CHIP 0UH	
FB402	1-414-234-11	INDUCTOR CHIP 0UH	
FB403	1-414-234-11	INDUCTOR CHIP 0UH	
FB404	1-414-234-11	INDUCTOR CHIP 0UH	
FB405	1-414-234-11	INDUCTOR CHIP 0UH	
FB406	1-414-234-11	INDUCTOR CHIP 0UH	
FB407	1-414-234-11	INDUCTOR CHIP 0UH	
FB1801	1-414-234-11	INDUCTOR CHIP 0UH	
FB1802	1-414-234-11	INDUCTOR CHIP 0UH	
FB1803	1-414-234-11	INDUCTOR CHIP 0UH	
FB1805	1-414-234-11	INDUCTOR CHIP 0UH	
FB1811	1-414-950-21	FERRITE 0UH	
FB1813	1-414-553-11	FERRITE 0UH	
FB1815	1-216-295-91	SHORT 0	
		< ENCAPSULATED FILTER >	
FL1801	1-233-767-21	FILTER	
FL1803	1-415-940-21	DELAY LINE	
FL1807	1-236-071-11	ENCAPSULATED COMPONENT	
FL1808	1-236-071-11	ENCAPSULATED COMPONENT	
FL1809	1-236-071-11	ENCAPSULATED COMPONENT	
		< IC >	
IC402	8-759-490-51	IC TDA4780/V4	
IC403	8-759-421-42	IC SDA9361	
IC1801	8-759-257-59	IC TDA8755T-T	
IC1803	8-759-439-27	IC TMS4C2972-28DTR	
IC1808	8-759-439-62	IC SAA4990H/V2	
IC1809	8-759-467-19	IC SDA9280B22	
IC1812	8-759-426-57	IC 74HCT4046AD	
IC1814	8-759-438-64	IC SAA4952WP/V1	
IC1815	8-759-444-24	IC 74HCT4046AD/S470	
IC1816	8-759-470-61	IC P83C654EBA/565	
IC1817	8-759-439-27	IC TMS4C2972-28DTR	
IC1823	8-759-991-41	IC L78L05ACZ	
IC1824	8-759-991-41	IC L78L05ACZ	
IC1825	8-759-234-77	IC TC4S66F	
		< COIL >	
L401	1-408-623-31	INDUCTOR 470UH	
L402	1-408-623-31	INDUCTOR 470UH	
L407	1-410-999-11	INDUCTOR CHIP 3.3UH	
L1801	1-410-435-21	INDUCTOR 220UH	
L1802	1-410-435-21	INDUCTOR 220UH	
L1803	1-408-597-31	INDUCTOR 3.3UH	
L1804	1-408-603-31	INDUCTOR 10UH	
L1805	1-410-999-11	INDUCTOR CHIP 3.3UH	
L1811	1-216-295-91	SHORT 0	
L1813	1-216-296-91	SHORT 0	
L1814	1-408-597-31	INDUCTOR 3.3UH	
L1901	1-410-426-11	INDUCTOR 39UH	
L1902	1-410-426-11	INDUCTOR 39UH	

B

REF. NO.	PART.NO	DESCRIPTION	REMARK
		< TRANSISTOR >	
Q411	8-729-901-06	TRANSISTOR DTA144EK	
Q412	8-729-901-06	TRANSISTOR DTA144EKB	
Q413	8-729-620-06	TRANSISTOR 2SC3052-EF	
Q415	8-729-900-53	TRANSISTOR DTC114EK	
Q416	8-729-620-06	TRANSISTOR 2SC3052-EF	
Q1801	8-729-216-22	TRANSISTOR 2SA1162-G	
Q1802	1-801-806-11	TRANSISTOR DTC144EKA	
Q1804	1-801-806-11	TRANSISTOR DTC144EKA	
Q1805	8-729-216-22	TRANSISTOR 2SA1162-G	
Q1808	1-801-806-11	TRANSISTOR DTC144EKA	
Q1809	1-801-806-11	TRANSISTOR DTC144EKA	
Q1810	1-801-806-11	TRANSISTOR DTC144EKA	
Q1812	8-729-620-06	TRANSISTOR 2SC3052-EF	
		< RESISTOR >	
JR404	1-216-295-91	SHORT 0	
JR406	1-216-295-91	SHORT 0	
JR408	1-216-295-91	SHORT 0	(KV-28WF3A/28WF3B/28WF3D/28WF3E/28WF3K)
JR409	1-216-049-91	RES,CHIP 1K 5% 1/10W	(KV-28WF3A/28WF3B/28WF3D/28WF3E/28WF3K)
	1-216-295-91	SHORT 0	(KV-32WF3A/32WF3B/32WF3D/32WF3E/32WF3K)
JR414	1-216-295-91	SHORT 0	
JR415	1-216-295-91	SHORT 0	
JR417	1-216-295-91	SHORT 0	
JR418	1-216-295-91	SHORT 0	
JR420	1-216-295-91	SHORT 0	
JR424	1-216-295-91	SHORT 0	
JR426	1-163-117-00	CERAMIC CHIP 100PF 5% 50V	
JR1801	1-216-295-91	SHORT 0	
JR1812	1-216-295-91	SHORT 0	
JR1815	1-216-295-91	SHORT 0	
JR1828	1-216-035-00	RES,CHIP 270 5% 1/10W	
JR1829	1-216-035-00	RES,CHIP 270 5% 1/10W	
JR1830	1-216-035-00	RES,CHIP 270 5% 1/10W	
JR1831	1-216-035-00	RES,CHIP 270 5% 1/10W	
JR1832	1-216-035-00	RES,CHIP 270 5% 1/10W	
JR1833	1-216-035-00	RES,CHIP 270 5% 1/10W	
JR1834	1-216-035-00	RES,CHIP 270 5% 1/10W	
JR1835	1-216-035-00	RES,CHIP 270 5% 1/10W	
JR1836	1-216-035-00	RES,CHIP 270 5% 1/10W	
JR1837	1-216-035-00	RES,CHIP 270 5% 1/10W	
JR1838	1-216-035-00	RES,CHIP 270 5% 1/10W	
JR1839	1-216-035-00	RES,CHIP 270 5% 1/10W	
JR1840	1-216-295-91	SHORT 0	
JR1845	1-216-295-91	SHORT 0	
JR1858	1-216-295-91	SHORT 0	
JR1868	1-216-295-91	SHORT 0	
JR1874	1-216-295-91	SHORT 0	
JR1875	1-216-017-91	RES,CHIP 47 5% 1/10W	
JR1883	1-216-295-91	SHORT 0	
JR1890	1-216-295-91	SHORT 0	
JR1894	1-216-295-91	SHORT 0	
JR1901	1-216-295-91	SHORT 0	
JR1905	1-216-295-91	SHORT 0	
JR1910	1-216-295-91	SHORT 0	
JR1915	1-216-295-91	SHORT 0	
R408	1-216-065-91	RES,CHIP 4.7K 5% 1/10W	
R409	1-216-057-00	RES,CHIP 2.2K 5% 1/10W	
R439	1-216-093-00	RES,CHIP 68K 5% 1/10W	
R443	1-216-025-91	RES,CHIP 100 5% 1/10W	
R444	1-216-025-91	RES,CHIP 100 5% 1/10W	
R445	1-216-025-91	RES,CHIP 100 5% 1/10W	
R446	1-216-025-91	RES,CHIP 100 5% 1/10W	
R447	1-216-025-91	RES,CHIP 100 5% 1/10W	
R448	1-216-043-91	RES,CHIP 560 5% 1/10W	
R449	1-216-049-91	RES,CHIP 1K 5% 1/10W	
R450	1-216-099-00	RES,CHIP 120K 5% 1/10W	
R451	1-216-101-00	RES,CHIP 150K 5% 1/10W	
R452	1-216-073-00	RES,CHIP 10K 5% 1/10W	
R453	1-216-017-91	RES,CHIP 47 5% 1/10W	
R454	1-216-017-91	RES,CHIP 47 5% 1/10W	
R455	1-216-063-91	RES,CHIP 3.9K 5% 1/10W	
R456	1-216-097-91	RES,CHIP 100K 5% 1/10W	
R457	1-216-099-00	RES,CHIP 120K 5% 1/10W	
R458	1-216-049-91	RES,CHIP 1K 5% 1/10W	
R459	1-216-049-91	RES,CHIP 1K 5% 1/10W	
R463	1-216-049-91	RES,CHIP 1K 5% 1/10W	
R465	1-216-073-00	RES,CHIP 10K 5% 1/10W	
R466	1-216-049-91	RES,CHIP 1K 5% 1/10W	
R467	1-216-041-00	RES,CHIP 470 5% 1/10W	
R468	1-216-025-91	RES,CHIP 100 5% 1/10W	
R469	1-216-025-91	RES,CHIP 100 5% 1/10W	
R470	1-216-055-00	RES,CHIP 1.8K 5% 1/10W	
R473	1-216-081-00	RES,CHIP 22K 5% 1/10W	
R477	1-216-057-00	RES,CHIP 2.2K 5% 1/10W	
R483	1-216-063-91	RES,CHIP 3.9K 5% 1/10W	
R484	1-216-049-91	RES,CHIP 1K 5% 1/10W	
R487	1-216-295-91	SHORT 0	
R488	1-216-107-00	RES,CHIP 270K 5% 1/10W	
R490	1-216-295-91	SHORT 0	
R491	1-216-107-00	RES,CHIP 270K 5% 1/10W	
R499	1-216-025-91	RES,CHIP 100 5% 1/10W	
R1801	1-216-051-00	RES,CHIP 1.2K 5% 1/10W	
R1802	1-216-049-91	RES,CHIP 1K 5% 1/10W	
R1803	1-216-049-91	RES,CHIP 1K 5% 1/10W	
R1804	1-216-053-00	RES,CHIP 1.5K 5% 1/10W	
R1805	1-216-049-91	RES,CHIP 1K 5% 1/10W	
R1806	1-216-051-00	RES,CHIP 1.2K 5% 1/10W	
R1807	1-216-049-91	RES,CHIP 1K 5% 1/10W	
R1808	1-216-025-91	RES,CHIP 100 5% 1/10W	
R1810	1-216-076-00	RES,CHIP 13K 5% 1/10W	
R1811	1-216-025-91	RES,CHIP 100 5% 1/10W	
R1812	1-216-033-00	RES,CHIP 220 5% 1/10W	
R1813	1-216-045-00	RES,CHIP 680 5% 1/10W	
R1814	1-216-031-00	RES,CHIP 180 5% 1/10W	
R1815	1-216-037-00	RES,CHIP 330 5% 1/10W	
R1816	1-216-295-91	SHORT 0	
R1817	1-216-037-00	RES,CHIP 330 5% 1/10W	
R1818	1-216-037-00	RES,CHIP 330 5% 1/10W	
R1819	1-216-073-00	RES,CHIP 10K 5% 1/10W	
R1820	1-216-029-00	RES,CHIP 150 5% 1/10W	

B A

REF. NO.	PART.NO	DESCRIPTION			REMARK
R1821	1-216-023-00	RES,CHIP	82	5%	1/10W
R1822	1-216-049-91	RES,CHIP	1K	5%	1/10W
R1831	1-216-081-00	RES,CHIP	22K	5%	1/10W
R1832	1-216-065-91	RES,CHIP	4.7K	5%	1/10W
R1833	1-216-295-91	SHORT	0		
R1835	1-216-073-00	RES,CHIP	10K	5%	1/10W
R1844	1-216-081-00	RES,CHIP	22K	5%	1/10W
R1845	1-216-065-91	RES,CHIP	4.7K	5%	1/10W
R1846	1-216-077-00	RES,CHIP	15K	5%	1/10W
R1848	1-216-025-91	RES,CHIP	100	5%	1/10W
R1849	1-216-001-00	RES,CHIP	10	5%	1/10W
R1850	1-216-057-00	RES,CHIP	2.2K	5%	1/10W
R1851	1-216-057-00	RES,CHIP	2.2K	5%	1/10W
R1852	1-216-057-00	RES,CHIP	2.2K	5%	1/10W
R1853	1-216-057-00	RES,CHIP	2.2K	5%	1/10W
R1854	1-216-057-00	RES,CHIP	2.2K	5%	1/10W
R1855	1-216-057-00	RES,CHIP	2.2K	5%	1/10W
R1856	1-216-057-00	RES,CHIP	2.2K	5%	1/10W
R1857	1-216-057-00	RES,CHIP	2.2K	5%	1/10W
R1858	1-216-057-00	RES,CHIP	2.2K	5%	1/10W
R1859	1-216-017-91	RES,CHIP	47	5%	1/10W
R1861	1-216-295-91	SHORT	0		
R1864	1-216-071-00	RES,CHIP	8.2K	5%	1/10W
R1866	1-216-089-91	RES,CHIP	47K	5%	1/10W
R1867	1-216-075-00	RES,CHIP	12K	5%	1/10W
R1868	1-216-089-91	RES,CHIP	47K	5%	1/10W
R1869	1-216-049-91	RES,CHIP	1K	5%	1/10W
R1871	1-216-069-00	RES,CHIP	6.8K	5%	1/10W
R1878	1-216-009-00	RES,CHIP	22	5%	1/10W
R1879	1-216-049-91	RES,CHIP	1K	5%	1/10W
R1880	1-216-085-00	RES,CHIP	33K	5%	1/10W
R1881	1-216-065-91	RES,CHIP	4.7K	5%	1/10W
R1882	1-216-085-00	RES,CHIP	33K	5%	1/10W
R1885	1-216-049-91	RES,CHIP	1K	5%	1/10W
R1886	1-216-295-91	SHORT	0		
R1888	1-216-021-00	RES,CHIP	68	5%	1/10W
R1890	1-216-295-91	SHORT	0		
R1893	1-216-295-91	SHORT	0		
R1894	1-216-047-91	RES,CHIP	820	5%	1/10W
R1895	1-216-067-00	RES,CHIP	5.6K	5%	1/10W
R1896	1-216-059-00	RES,CHIP	2.7K	5%	1/10W
R1897	1-216-065-91	RES,CHIP	4.7K	5%	1/10W
R1901	1-216-059-00	RES,CHIP	2.7K	5%	1/10W
R1902	1-216-059-00	RES,CHIP	2.7K	5%	1/10W
R1903	1-216-059-00	RES,CHIP	2.7K	5%	1/10W
R1904	1-216-059-00	RES,CHIP	2.7K	5%	1/10W
R1905	1-216-059-00	RES,CHIP	2.7K	5%	1/10W
R1906	1-216-059-00	RES,CHIP	2.7K	5%	1/10W
R1907	1-216-059-00	RES,CHIP	2.7K	5%	1/10W
R1908	1-216-059-00	RES,CHIP	2.7K	5%	1/10W
R1909	1-216-059-00	RES,CHIP	2.7K	5%	1/10W
R1910	1-216-059-00	RES,CHIP	2.7K	5%	1/10W
R1911	1-216-059-00	RES,CHIP	2.7K	5%	1/10W
R1912	1-216-059-00	RES,CHIP	2.7K	5%	1/10W
R1922	1-216-025-91	RES,CHIP	100	5%	1/10W
R1928	1-216-115-00	RES,CHIP	560K	5%	1/10W
R1934	1-216-115-00	RES,CHIP	560K	5%	1/10W
R1940	1-216-025-91	RES,CHIP	100	5%	1/10W

< CRYSTAL >

X401	1-767-639-21	VIBRATOR, CRYSTAL	
X1801	1-579-175-11	VIBRATOR, CERAMIC	

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*A-1632-777-A	A BOARD COMPLETE	(KV-28WF3A)	
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*A-1632-776-A	A BOARD COMPLETE	(KV-28WF3B)	
	**********		
*A-1632-724-A	A BOARD COMPLETE	(KV-28WF3D)	
	**********		
*A-1632-778-A	A BOARD COMPLETE	(KV-28WF3E)	
	**********		
*A-1632-779-A	A BOARD COMPLETE	(KV-28WF3K)	
	**********		
*A-1632-772-A	A BOARD COMPLETE	(KV-32WF3A)	
	**********		
*A-1632-773-A	A BOARD COMPLETE	(KV-32WF3B)	
	**********		
*A-1632-724-A	A BOARD COMPLETE	(KV-32WF3D)	
	**********		
*A-1632-774-A	A BOARD COMPLETE	(KV-32WF3E)	
	**********		
*A-1632-775-A	A BOARD COMPLETE	(KV-32WF3K)	
	**********		

< CAPACITOR >

C101	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C102	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C103	1-163-253-11	CERAMIC CHIP	120PF	5%	50V
					(KV-28WF3B/32WF3B)
C105	1-126-965-11	ELECT	22MF	20%	50V
C111	1-126-964-11	ELECT	10MF	20%	50V
C112	1-164-346-11	CERAMIC CHIP	1MF		16V
C114	1-164-346-11	CERAMIC CHIP	1MF		16V
C116	1-126-967-11	ELECT	47MF	20%	16V
C117	1-163-017-00	CERAMIC CHIP	0.0047MF	10%	50V
C118	1-126-967-11	ELECT	47MF	20%	16V
C119	1-163-017-00	CERAMIC CHIP	0.0047MF	10%	50V
C120	1-126-964-11	ELECT	10MF	20%	50V
C121	1-164-299-11	CERAMIC CHIP	0.22MF	10%	25V
C122	1-164-346-11	CERAMIC CHIP	1MF		16V
C126	1-126-967-11	ELECT	47MF	20%	16V
C127	1-163-017-00	CERAMIC CHIP	0.0047MF	10%	50V
C128	1-126-967-11	ELECT	47MF	20%	16V
C129	1-163-017-00	CERAMIC CHIP	0.0047MF	10%	50V
C130	1-163-133-00	CERAMIC CHIP	470PF	5%	50V
C131	1-164-346-11	CERAMIC CHIP	1MF		16V
C132	1-163-133-00	CERAMIC CHIP	470PF	5%	50V
C133	1-164-346-11	CERAMIC CHIP	1MF		16V
C134	1-126-964-11	ELECT	10MF	20%	50V
C135	1-164-299-11	CERAMIC CHIP	0.22MF	10%	25V
C136	1-126-964-11	ELECT	10MF	20%	50V
C137	1-164-506-11	CERAMIC CHIP	4.7MF		16V
C140	1-164-506-11	CERAMIC CHIP	4.7MF		16V
C141	1-164-506-11	CERAMIC CHIP	4.7MF		16V
C143	1-163-249-11	CERAMIC CHIP	82PF	5%	50V
					(KV-28WF3B/32WF3B)

A

REF. NO.	PART.NO	DESCRIPTION	REMARK
C144	1-163-227-11	CERAMIC CHIP 10PF	0.5PF 50V (KV-28WF3B/32WF3B)
C145	1-163-249-11	CERAMIC CHIP 82PF	5% 50V (KV-28WF3B/32WF3B)
C146	1-164-346-11	CERAMIC CHIP 1MF	16V
C150	1-164-004-11	CERAMIC CHIP 0.1MF	10% 25V
C151	1-164-004-11	CERAMIC CHIP 0.1MF	10% 25V
C152	1-126-964-11	ELECT 10MF	20% 50V
C153	1-110-501-11	CERAMIC CHIP 0.33MF	10% 16V
C154	1-110-501-11	CERAMIC CHIP 0.33MF	10% 16V
C155	1-164-004-11	CERAMIC CHIP 0.1MF	10% 25V
C156	1-164-506-11	CERAMIC CHIP 4.7MF	16V
C157	1-164-506-11	CERAMIC CHIP 4.7MF	16V
C159	1-164-505-11	CERAMIC CHIP 2.2MF	16V
C160	1-163-251-11	CERAMIC CHIP 100PF	5% 50V
C162	1-164-346-11	CERAMIC CHIP 1MF	16V
C163	1-163-009-11	CERAMIC CHIP 0.001MF	10% 50V
C164	1-164-232-11	CERAMIC CHIP 0.01MF	10% 50V
C165	1-164-346-11	CERAMIC CHIP 1MF	16V
C166	1-163-251-11	CERAMIC CHIP 100PF	5% 50V
C167	1-164-222-11	CERAMIC CHIP 0.22MF	25V
C200	1-163-251-11	CERAMIC CHIP 100PF	5% 50V
C201	1-163-243-11	CERAMIC CHIP 47PF	5% 50V
C202	1-164-506-11	CERAMIC CHIP 4.7MF	16V
C203	1-164-004-11	CERAMIC CHIP 0.1MF	10% 25V
C204	1-162-568-11	CERAMIC CHIP 0.33MF	10% 16V
C205	1-164-506-11	CERAMIC CHIP 4.7MF	16V
C206	1-164-004-11	CERAMIC CHIP 0.1MF	10% 25V
C207	1-110-501-11	CERAMIC CHIP 0.33MF	10% 16V
C208	1-110-501-11	CERAMIC CHIP 0.33MF	10% 16V
C209	1-110-501-11	CERAMIC CHIP 0.33MF	10% 16V
C210	1-110-501-11	CERAMIC CHIP 0.33MF	10% 16V
C211	1-163-133-00	CERAMIC CHIP 470PF	5% 50V
C212	1-163-133-00	CERAMIC CHIP 470PF	5% 50V
C213	1-164-004-11	CERAMIC CHIP 0.1MF	10% 25V
C214	1-164-506-11	CERAMIC CHIP 4.7MF	16V
C215	1-164-506-11	CERAMIC CHIP 4.7MF	16V
C216	1-164-004-11	CERAMIC CHIP 0.1MF	10% 25V
C217	1-126-964-11	ELECT 10MF	20% 50V
C218	1-126-964-11	ELECT 10MF	20% 50V
C219	1-163-131-00	CERAMIC CHIP 390PF	5% 50V
C220	1-163-131-00	CERAMIC CHIP 390PF	5% 50V
C221	1-163-275-11	CERAMIC CHIP 0.001MF	5% 50V
C222	1-163-275-11	CERAMIC CHIP 0.001MF	5% 50V
C223	1-163-275-11	CERAMIC CHIP 0.001MF	5% 50V
C224	1-163-275-11	CERAMIC CHIP 0.001MF	5% 50V
C227	1-165-320-11	CERAMIC CHIP 0.47MF	10% 16V
C228	1-165-320-11	CERAMIC CHIP 0.47MF	10% 16V
C229	1-164-004-11	CERAMIC CHIP 0.1MF	10% 25V
C230	1-164-506-11	CERAMIC CHIP 4.7MF	16V
C231	1-163-087-00	CERAMIC CHIP 4PF	0.25PF 50V
C232	1-163-087-00	CERAMIC CHIP 4PF	0.25PF 50V
C233	1-163-243-11	CERAMIC CHIP 47PF	5% 50V
C234	1-163-243-11	CERAMIC CHIP 47PF	5% 50V
C255	1-164-232-11	CERAMIC CHIP 0.01MF	10% 50V
C303	1-164-004-11	CERAMIC CHIP 0.1MF	10% 25V
C304	1-164-004-11	CERAMIC CHIP 0.1MF	10% 25V
C305	1-164-004-11	CERAMIC CHIP 0.1MF	10% 25V
C306	1-164-004-11	CERAMIC CHIP 0.1MF	10% 25V
C307	1-164-004-11	CERAMIC CHIP 0.1MF	10% 25V
C308	1-164-004-11	CERAMIC CHIP 0.1MF	10% 25V
C309	1-164-004-11	CERAMIC CHIP 0.1MF	10% 25V
C310	1-164-004-11	CERAMIC CHIP 0.1MF	10% 25V
C311	1-164-004-11	CERAMIC CHIP 0.1MF	10% 25V
C312	1-164-004-11	CERAMIC CHIP 0.1MF	10% 25V
C313	1-164-004-11	CERAMIC CHIP 0.1MF	10% 25V
C314	1-164-004-11	CERAMIC CHIP 0.1MF	10% 25V
C315	1-164-004-11	CERAMIC CHIP 0.1MF	10% 25V
C316	1-164-004-11	CERAMIC CHIP 0.1MF	10% 25V
C317	1-164-004-11	CERAMIC CHIP 0.1MF	10% 25V
C318	1-164-182-11	CERAMIC CHIP 0.0033MF	10% 50V
C319	1-164-182-11	CERAMIC CHIP 0.0033MF	10% 50V
C320	1-165-320-11	CERAMIC CHIP 0.47MF	10% 16V
C321	1-164-506-11	CERAMIC CHIP 4.7MF	16V
C322	1-164-506-11	CERAMIC CHIP 4.7MF	16V
C323	1-164-506-11	CERAMIC CHIP 4.7MF	16V
C324	1-164-004-11	CERAMIC CHIP 0.1MF	10% 25V
C325	1-164-004-11	CERAMIC CHIP 0.1MF	10% 25V
C332	1-164-232-11	CERAMIC CHIP 0.01MF	10% 50V
C333	1-164-004-11	CERAMIC CHIP 0.1MF	10% 25V
C334	1-164-232-11	CERAMIC CHIP 0.01MF	10% 50V
C335	1-164-004-11	CERAMIC CHIP 0.1MF	10% 25V
C336	1-164-004-11	CERAMIC CHIP 0.1MF	10% 25V
C337	1-110-501-11	CERAMIC CHIP 0.33MF	10% 16V
C338	1-164-004-11	CERAMIC CHIP 0.1MF	10% 25V
C339	1-164-232-11	CERAMIC CHIP 0.01MF	10% 50V
C340	1-164-232-11	CERAMIC CHIP 0.01MF	10% 50V
C341	1-164-232-11	CERAMIC CHIP 0.01MF	10% 50V
C342	1-164-004-11	CERAMIC CHIP 0.1MF	10% 25V
C343	1-164-232-11	CERAMIC CHIP 0.01MF	10% 50V
C344	1-164-232-11	CERAMIC CHIP 0.01MF	10% 50V
C345	1-164-004-11	CERAMIC CHIP 0.1MF	10% 25V
C346	1-164-505-11	CERAMIC CHIP 2.2MF	16V
C347	1-164-505-11	CERAMIC CHIP 2.2MF	16V
C350	1-164-506-11	CERAMIC CHIP 4.7MF	16V
C351	1-164-506-11	CERAMIC CHIP 4.7MF	16V
C355	1-163-231-11	CERAMIC CHIP 15PF	5% 50V
C356	1-163-231-11	CERAMIC CHIP 15PF	5% 50V
C357	1-163-241-11	CERAMIC CHIP 39PF	5% 50V
C360	1-163-243-11	CERAMIC CHIP 47PF	5% 50V
C1001	1-164-506-11	CERAMIC CHIP 4.7MF	16V
C1002	1-164-506-11	CERAMIC CHIP 4.7MF	16V
C1003	1-164-506-11	CERAMIC CHIP 4.7MF	16V
C1004	1-164-506-11	CERAMIC CHIP 4.7MF	16V
C1005	1-164-506-11	CERAMIC CHIP 4.7MF	16V
C1006	1-165-321-11	CERAMIC CHIP 0.68MF	10% 16V
C1007	1-164-157-11	CERAMIC CHIP 0.068MF	10% 25V
C1010	1-126-933-11	ELECT 100MF	20% 16V
C1020	1-163-251-11	CERAMIC CHIP 100PF	5% 50V
C1021	1-163-251-11	CERAMIC CHIP 100PF	5% 50V
C1022	1-163-251-11	CERAMIC CHIP 100PF	5% 50V
C1035	1-163-251-11	CERAMIC CHIP 100PF	5% 50V
C1036	1-164-004-11	CERAMIC CHIP 0.1MF	10% 25V
C1037	1-163-243-11	CERAMIC CHIP 47PF	5% 50V

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REF. NO.	PART.NO	DESCRIPTION		REMARK
C1038	1-163-243-11	CERAMIC CHIP 47PF	5%	50V
C1039	1-164-004-11	CERAMIC CHIP 0.1MF	10%	25V
C1040	1-164-222-11	CERAMIC CHIP 0.22MF		25V
C1041	1-164-222-11	CERAMIC CHIP 0.22MF		25V
C1042	1-164-505-11	CERAMIC CHIP 2.2MF		16V
C1043	1-163-251-11	CERAMIC CHIP 100PF	5%	50V
C1050	1-104-661-91	ELECT 330MF	20%	16V
C1060	1-163-001-11	CERAMIC CHIP 220PF	10%	50V
C1061	1-164-505-11	CERAMIC CHIP 2.2MF		16V
C1101	1-164-506-11	CERAMIC CHIP 4.7MF		16V
C1102	1-164-506-11	CERAMIC CHIP 4.7MF		16V
C1103	1-164-004-11	CERAMIC CHIP 0.1MF	10%	25V
C1104	1-164-506-11	CERAMIC CHIP 4.7MF		16V
C1105	1-163-009-11	CERAMIC CHIP 0.001MF	10%	50V
C1106	1-164-346-11	CERAMIC CHIP 1MF		16V
C1108	1-163-009-11	CERAMIC CHIP 0.001MF	10%	50V
C1109	1-163-037-11	CERAMIC CHIP 0.022MF	10%	50V
C1110	1-164-232-11	CERAMIC CHIP 0.01MF	10%	50V
C1111	1-164-232-11	CERAMIC CHIP 0.01MF	10%	50V
C1112	1-163-235-11	CERAMIC CHIP 22PF	5%	50V
C1113	1-163-235-11	CERAMIC CHIP 22PF	5%	50V
C1115	1-163-809-11	CERAMIC CHIP 0.047MF	10%	25V
C1116	1-164-506-11	CERAMIC CHIP 4.7MF		16V
C1301	1-164-004-11	CERAMIC CHIP 0.1MF	10%	25V
C1306	1-163-243-11	CERAMIC CHIP 47PF	5%	50V
C1465	1-163-243-11	CERAMIC CHIP 47PF	5%	50V
C2001	1-164-506-11	CERAMIC CHIP 4.7MF		16V
C2002	1-164-506-11	CERAMIC CHIP 4.7MF		16V
C2004	1-164-506-11	CERAMIC CHIP 4.7MF		16V
C2005	1-164-506-11	CERAMIC CHIP 4.7MF		16V
C2007	1-163-038-11	CERAMIC CHIP 0.1MF		25V
C2020	1-164-222-11	CERAMIC CHIP 0.22MF		25V
C2021	1-164-222-11	CERAMIC CHIP 0.22MF		25V
C2023	1-163-038-11	CERAMIC CHIP 0.1MF		25V
C2024	1-163-251-11	CERAMIC CHIP 100PF	5%	50V
C2025	1-163-235-11	CERAMIC CHIP 22PF	5%	50V
C2026	1-163-235-11	CERAMIC CHIP 22PF	5%	50V
C2028	1-163-031-11	CERAMIC CHIP 0.01MF		50V
C2029	1-164-222-11	CERAMIC CHIP 0.22MF		25V
C2030	1-163-251-11	CERAMIC CHIP 100PF	5%	50V
C2031	1-164-222-11	CERAMIC CHIP 0.22MF		25V
C2033	1-163-251-11	CERAMIC CHIP 100PF	5%	50V
C2034	1-164-489-11	CERAMIC CHIP 0.22MF	10%	16V

< FILTER >

CD1001	1-527-992-31	OSCILLATOR, CERAMIC	
CF200	1-409-327-00	TRAP, CERAMIC (6.5MHZ)	

< CONNECTOR >

CN101	1-695-301-11	CONNECTOR, BOARD TO BOARD 40P	
CN115	*1-564-524-11	PLUG, CONNECTOR 9P	
CN201	1-766-296-11	CONNECTOR, DUAL SCART	
CN2012	*1-564-525-11	PLUG, CONNECTOR 10P	
CP101	1-473-953-11	ADAPTOR, IEC	

< DIODE >

D102	8-719-158-49	DIODE RD12SB2	
D103	8-719-158-49	DIODE RD12SB2	
D104	8-719-158-49	DIODE RD12SB2	
D105	8-719-158-49	DIODE RD12SB2	
D199	8-719-914-43	DIODE DAN202K	
D200	8-719-158-49	DIODE RD12SB2	
D201	8-719-158-49	DIODE RD12SB2	
D202	8-719-158-49	DIODE RD12SB2	
D203	8-719-158-49	DIODE RD12SB2	
D204	8-719-158-49	DIODE RD12SB2	
D205	8-719-158-49	DIODE RD12SB2	
D206	8-719-158-49	DIODE RD12SB2	
D207	8-719-158-49	DIODE RD12SB2	
D208	8-719-158-49	DIODE RD12SB2	
D209	8-719-158-49	DIODE RD12SB2	
D210	8-719-158-49	DIODE RD12SB2	
D211	8-719-158-49	DIODE RD12SB2	
D212	8-719-158-49	DIODE RD12SB2	
D213	8-719-158-49	DIODE RD12SB2	
D214	8-719-158-49	DIODE RD12SB2	
D215	8-719-158-49	DIODE RD12SB2	
D217	8-719-158-49	DIODE RD12SB2	
D218	8-719-158-49	DIODE RD12SB2	
D219	8-719-158-49	DIODE RD12SB2	
D220	8-719-158-49	DIODE RD12SB2	
D221	8-719-158-49	DIODE RD12SB2	
D301	8-719-401-41	DIODE MA3051L-TX	
D305	8-719-988-62	DIODE 1SS355	
D1007	8-719-914-44	DIODE DAP202K	
D1008	8-719-914-43	DIODE DAN202K	
D1009	8-719-105-91	DIODE RD5.6M-B2	
D1010	8-719-105-91	DIODE RD5.6M-B2	
D1012	8-719-914-43	DIODE DAN202K	
D1403	8-719-988-62	DIODE 1SS355	

< FERRITE BEAD >

FB101	1-414-235-11	INDUCTOR CHIP 0UH	
FB102	1-414-235-11	INDUCTOR CHIP 0UH	
FB2001	1-414-234-11	INDUCTOR CHIP 0UH	

< ENCAPSULATED FILTER >

FL102	1-236-071-11	ENCAPSULATED COMPONENT	
FL103	1-410-397-21	FERRITE 1.1UH	
FL200	1-236-071-11	ENCAPSULATED COMPONENT	
FL201	1-233-764-21	FILTER	
FL202	1-236-071-11	ENCAPSULATED COMPONENT	
FL203	1-236-071-11	ENCAPSULATED COMPONENT	
FL302	1-236-071-11	ENCAPSULATED COMPONENT	
FL1001	1-236-071-11	ENCAPSULATED COMPONENT	
FL1002	1-236-071-11	ENCAPSULATED COMPONENT	
FL1101	1-236-071-11	ENCAPSULATED COMPONENT	
FL1102	1-236-071-11	ENCAPSULATED COMPONENT	
FL2001	1-236-071-11	ENCAPSULATED COMPONENT	
FL2003	1-236-071-11	ENCAPSULATED COMPONENT	

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REF. NO.	PART.NO	DESCRIPTION	REMARK
		< IC >	
IC101	8-752-068-45	IC CXA1855Q	
IC102	8-759-267-25	IC LM2940T-9.0	
IC104	8-759-514-57	IC BA7046F	
IC201	8-759-437-97	IC MSP3400C-PS-C6-T-S	(KV-28WF3A/28WF3D/ KV-32WF3A/32WF3D)
	8-759-491-94	IC MSP3410D-PS-B4-T	(KV-28WF3B/28WF3E/28WF3K/ KV-32WF3B/32WF3E/32WF3K)
IC302	8-759-447-68	IC TDA9143/N1	
IC303	8-759-288-85	IC TDA4665T-T	
IC304	8-759-439-60	IC TDA9170T	
IC1001	8-759-442-44	IC SDA30C164-2-GEG	
IC1002	8-759-444-65	IC M27C4001-15C1-AE408	
	1-750-797-11	SOCKET, PLCC (IC1002)	
IC1003	8-759-378-21	IC ST24C16FB6	
IC1004	8-759-259-18	IC MB3793-42PNF	
IC1006	8-759-988-13	IC LM393PS	
IC1101	8-752-383-01	IC CXD2053AS	
IC1303	8-759-385-76	IC MC14052BDR2	(KV-28WF3A/28WF3D/28WF3E/28WF3K/ KV-32WF3A/32WF3D/32WF3E/32WF3K)
IC2001	8-759-438-62	IC SDA5275	
IC2004	8-759-483-52	IC HYB514400BJ-60	
		< COIL >	
L101	1-412-751-11	INDUCTOR 18UH	(KV-28WF3B/32WF3B)
L321	1-412-006-31	INDUCTOR CHIP 10UH	
		< TRANSISTOR >	
Q102	8-729-620-06	TRANSISTOR 2SC3052-EF	
Q103	8-729-039-67	TRANSISTOR BSS83	(KV-28WF3B/32WF3B)
Q104	8-729-620-06	TRANSISTOR 2SC3052-EF	(KV-28WF3B/32WF3B)
Q106	8-729-216-22	TRANSISTOR 2SA1162-G	(KV-28WF3B/32WF3B)
Q107	8-729-216-22	TRANSISTOR 2SA1162-G	
Q108	8-729-620-06	TRANSISTOR 2SC3052-EF	
Q109	8-729-216-22	TRANSISTOR 2SA1162-G	
Q110	8-729-038-96	TRANSISTOR IMZ1A-T109	
Q112	8-729-216-22	TRANSISTOR 2SA1162-G	
Q113	8-729-216-22	TRANSISTOR 2SA1162-G	
Q120	8-729-901-00	TRANSISTOR DTC124EK	
Q200	8-729-620-06	TRANSISTOR 2SC3052-EF	
Q205	8-729-620-06	TRANSISTOR 2SC3052-EF	
Q301	8-729-620-06	TRANSISTOR 2SC3052-EF	
Q302	8-729-620-06	TRANSISTOR 2SC3052-EF	
Q315	8-729-038-96	TRANSISTOR IMZ1A-T109	
Q316	8-729-038-96	TRANSISTOR IMZ1A-T109	
Q317	8-729-038-96	TRANSISTOR IMZ1A-T109	
Q321	8-729-901-81	TRANSISTOR 2SC2412K-T-146-R	(KV-28WF3A/28WF3D/28WF3E/28WF3K/ KV-32WF3A/32WF3D/32WF3E/32WF3K)
Q322	8-729-901-81	TRANSISTOR 2SC2412K-T-146-R	(KV-28WF3A/28WF3D/28WF3E/28WF3K/ KV-32WF3A/32WF3D/32WF3E/32WF3K)
Q1001	8-729-620-06	TRANSISTOR 2SC3052-EF	(KV-28WF3B/32WF3B)
Q1015	8-729-900-53	TRANSISTOR DTC114EK	
Q1101	8-729-620-06	TRANSISTOR 2SC3052-EF	
Q1301	8-729-216-22	TRANSISTOR 2SA1162-G	
Q1302	8-729-216-22	TRANSISTOR 2SA1162-G	
Q1303	8-729-216-22	TRANSISTOR 2SA1162-G	
Q1304	8-729-216-22	TRANSISTOR 2SA1162-G	
Q1305	8-729-216-22	TRANSISTOR 2SA1162-G	
Q1306	8-729-216-22	TRANSISTOR 2SA1162-G	
Q1311	8-729-620-06	TRANSISTOR 2SC3052-EF	
Q1312	8-729-620-06	TRANSISTOR 2SC3052-EF	
Q1313	8-729-216-22	TRANSISTOR 2SA1162-G	
Q2005	8-729-620-06	TRANSISTOR 2SC3052-EF	
Q2006	1-801-806-11	TRANSISTOR DTC144EKA	
Q2007	1-801-806-11	TRANSISTOR DTC144EKA	
		< RESISTOR >	
JR201	1-216-063-91	RES,CHIP 3.9K 5% 1/10W	
JR202	1-216-063-91	RES,CHIP 3.9K 5% 1/10W	
JR1001	1-216-295-91	SHORT 0	
JR1002	1-216-295-91	SHORT 0	
JR1003	1-216-295-91	SHORT 0	
JR1004	1-216-295-91	SHORT 0	
JR1008	1-216-025-91	RES,CHIP 100 5% 1/10W	
JR1009	1-216-025-91	RES,CHIP 100 5% 1/10W	
JR1010	1-216-025-91	RES,CHIP 100 5% 1/10W	
JR1011	1-216-025-91	RES,CHIP 100 5% 1/10W	
JR1301	1-216-295-91	SHORT 0	(KV-28WF3B/32WF3B)
JR1302	1-216-295-91	SHORT 0	(KV-28WF3B/32WF3B)
JR1405	1-216-295-91	SHORT 0	
R101	1-216-061-00	RES,CHIP 3.3K 5% 1/10W	
R102	1-216-025-91	RES,CHIP 100 5% 1/10W	
R103	1-216-025-91	RES,CHIP 100 5% 1/10W	
R104	1-216-073-00	RES,CHIP 10K 5% 1/10W	
R106	1-216-033-00	RES,CHIP 220 5% 1/10W	
R107	1-216-295-91	SHORT 0	(KV-28WF3A/28WF3D/28WF3E/28WF3K/ KV-32WF3A/32WF3D/32WF3E/32WF3K)
R108	1-216-057-00	RES,CHIP 2.2K 5% 1/10W	
R109	1-216-085-00	RES,CHIP 33K 5% 1/10W	
R110	1-216-097-91	RES,CHIP 100K 5% 1/10W	
R111	1-216-041-00	RES,CHIP 470 5% 1/10W	
R112	1-216-041-00	RES,CHIP 470 5% 1/10W	
R113	1-216-041-00	RES,CHIP 470 5% 1/10W	
R114	1-216-311-00	RES,CHIP 6.8 5% 1/10W	
R115	1-216-311-00	RES,CHIP 6.8 5% 1/10W	
R116	1-216-311-00	RES,CHIP 6.8 5% 1/10W	
R117	1-216-022-00	RES,CHIP 75 5% 1/10W	
R118	1-216-022-00	RES,CHIP 75 5% 1/10W	
R119	1-216-022-00	RES,CHIP 75 5% 1/10W	
R120	1-216-022-00	RES,CHIP 75 5% 1/10W	
R121	1-216-022-00	RES,CHIP 75 5% 1/10W	
R122	1-216-073-00	RES,CHIP 10K 5% 1/10W	
R123	1-216-073-00	RES,CHIP 10K 5% 1/10W	
R124	1-216-113-00	RES,CHIP 470K 5% 1/10W	
R126	1-216-039-00	RES,CHIP 390 5% 1/10W	
R127	1-216-039-00	RES,CHIP 390 5% 1/10W	
R128	1-216-113-00	RES,CHIP 470K 5% 1/10W	
R129	1-216-643-11	METAL CHIP 470 0.50% 1/10W	(KV-28WF3B/32WF3B)

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REF. NO.	PART.NO	DESCRIPTION			REMARK
R130	1-216-039-00	RES,CHIP	390	5%	1/10W
R131	1-216-039-00	RES,CHIP	390	5%	1/10W
R132	1-216-089-91	RES,CHIP	47K	5%	1/10W
R133	1-216-065-91	RES,CHIP	4.7K	5%	1/10W
R134	1-216-089-91	RES,CHIP	47K	5%	1/10W
R135	1-216-065-91	RES,CHIP	4.7K	5%	1/10W
R136	1-216-022-00	RES,CHIP	75	5%	1/10W
R137	1-216-033-00	RES,CHIP	220	5%	1/10W
R138	1-216-022-00	RES,CHIP	75	5%	1/10W
R139	1-216-033-00	RES,CHIP	220	5%	1/10W
R141	1-216-033-00	RES,CHIP	220	5%	1/10W
R142	1-216-033-00	RES,CHIP	220	5%	1/10W
R143	1-216-025-91	RES,CHIP	100	5%	1/10W
R144	1-216-025-91	RES,CHIP	100	5%	1/10W
R148	1-216-643-11	METAL CHIP	470	0.50%	1/10W (KV-28WF3B/32WF3B)
R149	1-216-073-00	RES,CHIP	10K	5%	1/10W (KV-28WF3B/32WF3B)
R150	1-216-049-91	RES,CHIP	1K	5%	1/10W (KV-28WF3B/32WF3B)
R151	1-216-643-11	METAL CHIP	470	0.50%	1/10W (KV-28WF3B/32WF3B)
R152	1-216-067-00	RES,CHIP	5.6K	5%	1/10W
R153	1-216-311-00	RES,CHIP	6.8	5%	1/10W
R154	1-216-067-00	RES,CHIP	5.6K	5%	1/10W
R156	1-216-051-00	RES,CHIP	1.2K	5%	1/10W (KV-28WF3B/32WF3B)
R157	1-216-025-91	RES,CHIP	100	5%	1/10W (KV-28WF3B/32WF3B)
R159	1-216-304-11	RES,CHIP	3.3	5%	1/10W
R160	1-216-039-00	RES,CHIP	390	5%	1/10W
R162	1-216-089-91	RES,CHIP	47K	5%	1/10W
R163	1-216-039-00	RES,CHIP	390	5%	1/10W
R164	1-216-025-91	RES,CHIP	100	5%	1/10W
R165	1-216-049-91	RES,CHIP	1K	5%	1/10W
R166	1-216-039-00	RES,CHIP	390	5%	1/10W
R167	1-216-039-00	RES,CHIP	390	5%	1/10W
R168	1-216-067-00	RES,CHIP	5.6K	5%	1/10W
R169	1-216-067-00	RES,CHIP	5.6K	5%	1/10W
R170	1-216-021-00	RES,CHIP	68	5%	1/10W
R171	1-216-021-00	RES,CHIP	68	5%	1/10W
R172	1-216-021-00	RES,CHIP	68	5%	1/10W
R173	1-216-021-00	RES,CHIP	68	5%	1/10W
R174	1-216-051-00	RES,CHIP	1.2K	5%	1/10W
R175	1-216-089-91	RES,CHIP	47K	5%	1/10W
R176	1-216-049-91	RES,CHIP	1K	5%	1/10W
R177	1-216-089-91	RES,CHIP	47K	5%	1/10W
R178	1-216-089-91	RES,CHIP	47K	5%	1/10W
R179	1-216-113-00	RES,CHIP	470K	5%	1/10W
R180	1-216-113-00	RES,CHIP	470K	5%	1/10W
R181	1-216-071-00	RES,CHIP	8.2K	5%	1/10W
R182	1-216-071-00	RES,CHIP	8.2K	5%	1/10W
R183	1-216-033-00	RES,CHIP	220	5%	1/10W
R184	1-216-033-00	RES,CHIP	220	5%	1/10W
R185	1-216-033-00	RES,CHIP	220	5%	1/10W
R186	1-216-057-00	RES,CHIP	2.2K	5%	1/10W
R187	1-216-107-00	RES,CHIP	270K	5%	1/10W
R188	1-216-113-00	RES,CHIP	470K	5%	1/10W
R189	1-218-755-11	METAL CHIP	130K	0.50%	1/10W
R190	1-216-075-00	RES,CHIP	12K	5%	1/10W
R191	1-216-069-00	RES,CHIP	6.8K	5%	1/10W
R192	1-216-041-00	RES,CHIP	470	5%	1/10W
R193	1-216-041-00	RES,CHIP	470	5%	1/10W
R194	1-216-041-00	RES,CHIP	470	5%	1/10W
R195	1-216-073-00	RES,CHIP	10K	5%	1/10W
R196	1-216-113-00	RES,CHIP	470K	5%	1/10W
R197	1-216-073-00	RES,CHIP	10K	5%	1/10W
R198	1-216-113-00	RES,CHIP	470K	5%	1/10W
R199	1-216-081-00	RES,CHIP	22K	5%	1/10W
R200	1-216-049-91	RES,CHIP	1K	5%	1/10W
R201	1-216-049-91	RES,CHIP	1K	5%	1/10W
R202	1-216-069-00	RES,CHIP	6.8K	5%	1/10W
R203	1-216-069-00	RES,CHIP	6.8K	5%	1/10W
R204	1-216-049-91	RES,CHIP	1K	5%	1/10W
R205	1-216-037-00	RES,CHIP	330	5%	1/10W
R207	1-216-039-00	RES,CHIP	390	5%	1/10W
R208	1-216-039-00	RES,CHIP	390	5%	1/10W
R213	1-216-025-91	RES,CHIP	100	5%	1/10W
R214	1-216-025-91	RES,CHIP	100	5%	1/10W
R215	1-216-025-91	RES,CHIP	100	5%	1/10W
R230	1-216-081-00	RES,CHIP	22K	5%	1/10W
R272	1-216-295-91	SHORT	0		
R311	1-216-095-00	RES,CHIP	82K	5%	1/10W
R312	1-216-077-00	RES,CHIP	15K	5%	1/10W
R313	1-216-025-91	RES,CHIP	100	5%	1/10W
R314	1-216-033-00	RES,CHIP	220	5%	1/10W
R317	1-216-065-91	RES,CHIP	4.7K	5%	1/10W
R318	1-220-860-91	METAL	0		
R321	1-216-073-00	RES,CHIP	10K	5%	1/10W (KV-32WF3A/32WF3D/32WF3E/32WF3K)
R322	1-216-073-00	RES,CHIP	10K	5%	1/10W (KV-32WF3A/32WF3D/32WF3E/32WF3K)
R323	1-216-065-91	RES,CHIP	4.7K	5%	1/10W
R330	1-216-041-00	RES,CHIP	470	5%	1/10W
R331	1-216-041-00	RES,CHIP	470	5%	1/10W
R332	1-216-041-00	RES,CHIP	470	5%	1/10W
R333	1-216-041-00	RES,CHIP	470	5%	1/10W
R334	1-216-041-00	RES,CHIP	470	5%	1/10W
R335	1-216-041-00	RES,CHIP	470	5%	1/10W
R336	1-216-041-00	RES,CHIP	470	5%	1/10W
R337	1-216-041-00	RES,CHIP	470	5%	1/10W
R338	1-216-041-00	RES,CHIP	470	5%	1/10W
R340	1-216-017-91	RES,CHIP	47	5%	1/10W
R341	1-216-025-91	RES,CHIP	100	5%	1/10W
R342	1-216-025-91	RES,CHIP	100	5%	1/10W
R345	1-216-025-91	RES,CHIP	100	5%	1/10W
R351	1-216-037-00	RES,CHIP	330	5%	1/10W
R352	1-216-049-91	RES,CHIP	1K	5%	1/10W
R353	1-216-041-00	RES,CHIP	470	5%	1/10W
R355	1-216-284-00	RES,CHIP	3.9M	5%	1/8W
R374	1-216-049-91	RES,CHIP	1K	5%	1/10W
R375	1-216-308-00	RES,CHIP	4.7	5%	1/10W
R1001	1-216-049-91	RES,CHIP	1K	5%	1/10W
R1011	1-216-295-91	SHORT	0		

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REF. NO.	PART.NO	DESCRIPTION			REMARK
R1012	1-216-041-00	RES,CHIP	470	5%	1/10W
R1030	1-216-073-00	RES,CHIP	10K	5%	1/10W
R1033	1-216-295-91	SHORT	0		
R1034	1-216-073-00	RES,CHIP	10K	5%	1/10W
R1036	1-216-049-91	RES,CHIP	1K	5%	1/10W
R1037	1-216-049-91	RES,CHIP	1K	5%	1/10W
R1038	1-216-049-91	RES,CHIP	1K	5%	1/10W
R1039	1-216-049-91	RES,CHIP	1K	5%	1/10W
R1040	1-216-049-91	RES,CHIP	1K	5%	1/10W
R1041	1-216-049-91	RES,CHIP	1K	5%	1/10W
R1042	1-216-025-91	RES,CHIP	100	5%	1/10W
R1044	1-216-025-91	RES,CHIP	100	5%	1/10W
R1045	1-216-073-00	RES,CHIP	10K	5%	1/10W
R1046	1-216-025-91	RES,CHIP	100	5%	1/10W
R1050	1-216-049-91	RES,CHIP	1K	5%	1/10W
R1051	1-216-057-00	RES,CHIP	2.2K	5%	1/10W
R1052	1-216-033-00	RES,CHIP	220	5%	1/10W
R1053	1-216-065-91	RES,CHIP	4.7K	5%	1/10W
R1056	1-216-049-91	RES,CHIP	1K	5%	1/10W
R1060	1-216-049-91	RES,CHIP	1K	5%	1/10W
R1061	1-216-049-91	RES,CHIP	1K	5%	1/10W
R1062	1-216-049-91	RES,CHIP	1K	5%	1/10W
R1063	1-216-073-00	RES,CHIP	10K	5%	1/10W
R1070	1-216-295-91	SHORT	0		
R1071	1-216-295-91	SHORT	0		
R1075	1-216-057-00	RES,CHIP	2.2K	5%	1/10W
R1076	1-216-073-00	RES,CHIP	10K	5%	1/10W
R1077	1-216-073-00	RES,CHIP	10K	5%	1/10W
R1078	1-216-073-00	RES,CHIP	10K	5%	1/10W
R1079	1-216-075-00	RES,CHIP	12K	5%	1/10W
R1101	1-216-025-91	RES,CHIP	100	5%	1/10W
R1102	1-216-025-91	RES,CHIP	100	5%	1/10W
R1103	1-216-025-91	RES,CHIP	100	5%	1/10W
R1104	1-216-025-91	RES,CHIP	100	5%	1/10W
R1105	1-216-073-00	RES,CHIP	10K	5%	1/10W
R1106	1-216-001-00	RES,CHIP	10	5%	1/10W
R1107	1-216-025-91	RES,CHIP	100	5%	1/10W
R1108	1-216-013-00	RES,CHIP	33	5%	1/10W
R1109	1-216-005-00	RES,CHIP	15	5%	1/10W
R1110	1-216-025-91	RES,CHIP	100	5%	1/10W
R1111	1-216-085-00	RES,CHIP	33K	5%	1/10W
R1112	1-216-025-91	RES,CHIP	100	5%	1/10W
R1113	1-216-025-91	RES,CHIP	100	5%	1/10W
R1115	1-216-009-00	RES,CHIP	22	5%	1/10W
R1301	1-216-057-00	RES,CHIP	2.2K	5%	1/10W
R1302	1-216-057-00	RES,CHIP	2.2K	5%	1/10W
R1303	1-216-037-00	RES,CHIP	330	5%	1/10W
R1304	1-216-037-00	RES,CHIP	330	5%	1/10W
R1305	1-216-065-91	RES,CHIP	4.7K	5%	1/10W
R1306	1-216-065-91	RES,CHIP	4.7K	5%	1/10W
R1325	1-216-009-00	RES,CHIP	22	5%	1/10W
R1340	1-216-037-00	RES,CHIP	330	5%	1/10W
R1341	1-216-017-91	RES,CHIP	47	5%	1/10W
R1342	1-216-017-91	RES,CHIP	47	5%	1/10W
R1344	1-216-037-00	RES,CHIP	330	5%	1/10W
R1455	1-216-284-00	RES,CHIP	3.9M	5%	1/8W
R2001	1-216-025-91	RES,CHIP	100	5%	1/10W
R2002	1-216-049-91	RES,CHIP	1K	5%	1/10W
R2003	1-216-097-91	RES,CHIP	100K	5%	1/10W
R2019	1-216-049-91	RES,CHIP	1K	5%	1/10W
R2020	1-216-041-00	RES,CHIP	470	5%	1/10W
R2021	1-216-073-00	RES,CHIP	10K	5%	1/10W
R2022	1-216-057-00	RES,CHIP	2.2K	5%	1/10W
R2023	1-216-063-91	RES,CHIP	3.9K	5%	1/10W
R2024	1-216-049-91	RES,CHIP	1K	5%	1/10W
R2025	1-216-025-91	RES,CHIP	100	5%	1/10W
R2026	1-216-025-91	RES,CHIP	100	5%	1/10W
R2027	1-216-049-91	RES,CHIP	1K	5%	1/10W
R2028	1-216-009-00	RES,CHIP	22	5%	1/10W
R2031	1-216-017-91	RES,CHIP	47	5%	1/10W
R2032	1-216-017-91	RES,CHIP	47	5%	1/10W
R2033	1-216-017-91	RES,CHIP	47	5%	1/10W
R2034	1-216-295-91	SHORT	0		
R2035	1-216-017-91	RES,CHIP	47	5%	1/10W
R2037	1-216-049-91	RES,CHIP	1K	5%	1/10W
R2040	1-216-057-00	RES,CHIP	2.2K	5%	1/10W
R2041	1-216-025-91	RES,CHIP	100	5%	1/10W
		< TUNER >			
TU101	1-693-338-11	TUNER/VIF (AEP)			(KV-28WF3A/28WF3D/28WF3E/28WF3K/ KV-32WF3A/32WF3D/32WF3E/32WF3K)
	1-693-340-11	TUNER/VIF (FR)			(KV-28WF3B/32WF3B)
		< CRYSTAL >			
X200	1-760-628-11	VIBRATOR, CRYSTAL			
X301	1-567-505-11	OSCILLATOR, CRYSTAL			
X302	1-567-504-11	OSCILLATOR, CRYSTAL			
X1001	1-760-551-21	VIBRATOR, CERAMIC			
X1101	1-767-342-21	VIBRATOR, CRYSTAL			
**********					
	*A-1636-030-A	G BOARD COMPLETE			(KV-28WF3A/28WF3B/28WF3D/ KV-28WF3E/28WF3K)
	*A-1636-031-A	G BOARD COMPLETE			(KV-32WF3A/32WF3B/32WF3D/ KV-32WF3E/32WF3K)
	*4-203-609-01	HOLDER, G			
	4-382-854-11	SCREW (M3X10), P, SW (+)			
		< CAPACITOR >			
C602	1-165-127-11	CERAMIC	470PF	10%	500V
C603	1-165-127-11	CERAMIC	470PF	10%	500V
C604	1-136-171-00	FILM	0.33MF	5%	50V
C605	1-137-399-11	FILM	0.1MF	5%	50V
C606	1-136-171-00	FILM	0.33MF	5%	50V
C607	1-137-399-11	FILM	0.1MF	5%	50V
C608	1-164-625-11	CERAMIC	680PF	10%	500V
C609	1-129-718-00	FILM	0.022MF	5%	630V
C610	1-126-953-11	ELECT	2200MF	20%	35V
C611	1-126-953-11	ELECT	2200MF	20%	35V
C612	1-104-665-11	ELECT	100MF	20%	25V
C613	1-128-548-11	ELECT	4700MF	20%	25V
C614	1-128-548-11	ELECT	4700MF	20%	25V
C615	1-110-626-11	ELECT	330MF	20%	160V
C616	1-164-625-11	CERAMIC	680PF	10%	500V

The components identified by shading and marked ⚠ are critical for safety
Replace only with the part number specified.

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REF. NO.		PART.NO	DESCRIPTION			REMARK
C617		1-136-559-11	MYLAR	0.0047MF	10%	400V
C618		1-104-989-91	FILM	0.0022MF	5%	200V
C621	⚠	1-136-527-12	FILM	0.47MF	20%	300V
C622	⚠	1-136-415-51	FILM	0.33MF	20%	300V
C624	⚠	1-113-907-51	CERAMIC	0.0022MF	99%	250V
C626	⚠	1-113-907-51	CERAMIC	0.0022MF	99%	250V
C627		1-126-767-11	ELECT	1000MF	20%	16V
C628		1-104-665-11	ELECT	100MF	20%	25V
C629		1-162-599-12	CERAMIC	0.0047MF		250V
C630		1-162-599-12	CERAMIC	0.0047MF		250V
C631	⚠	1-162-599-12	CERAMIC	0.0047MF		250V
C632		1-535-143-11	LEAD,JUMPER (10.0MM) (KV-28WF3A/28WF3B/28WF3D/28WF3E/28WF3K)			
	⚠	1-161-744-00	CERAMIC	0.01MF		400V (KV-32WF3A/32WF3B/32WF3D/32WF3E/32WF3K)
C633		1-125-555-11	ELECT(BLOCK)	330MF	20%	400V
C634		1-535-143-31	LEAD, JUMPER (15.0MM)			
C635		1-136-165-00	FILM	0.1MF	5%	50V
C636		1-136-165-00	FILM	0.1MF	5%	50V
C642	⚠	1-161-744-00	CERAMIC	0.01MF		400V
C648		1-101-001-00	CERAMIC	0.001MF		50V
C650		1-126-964-11	ELECT	10MF	20%	50V
C651		1-136-171-00	FILM	0.33MF	5%	50V
C662		1-126-943-11	ELECT	2200MF	20%	25V
C663		1-126-964-11	ELECT	10MF	20%	50V
C664		1-102-129-00	CERAMIC	0.01MF	10%	50V
C665		1-126-940-11	ELECT	330MF	20%	25V
			< CONNECTOR >			
CN0008	⚠	1-508-786-00	PIN, CONNECTOR (5MM PITCH) 2P			
CN0009	⚠	1-508-765-00	PIN, CONNECTOR (5MM PITCH) 3P			
CN0010	⚠	1-508-765-00	PIN, CONNECTOR (5MM PITCH) 3P (KV-32WF3A/32WF3B/32WF3D/32WF3E/32WF3K)			
CN0701		1-573-299-21	CONNECTOR, BOARD TO BOARD 10P			
CN0702		1-695-300-11	CONNECTOR, BOARD TO BOARD 20P			
CN0703	⚠	*1-691-291-11	PIN, CONNECTOR (PC BOARD) 5P			
			< DIODE >			
D601		8-719-510-53	DIODE D4SB60L-L			
D602		8-719-991-33	DIODE 1SS133T-77			
D603		8-719-109-89	DIODE RD5.6ESB2			
D604		1-535-303-00	LEAD, JUMPER (5.0MM)			
D605		8-719-047-31	DIODE RBA-402L			
D607		8-719-510-12	DIODE D10SC4M			
D608		8-719-510-12	DIODE D10SC4M			
D609		8-719-047-31	DIODE RBA-402L			
D610		8-719-312-39	DIODE R2K-V1			
D611		8-719-510-64	DIODE S2LA20F			
D614		8-719-911-19	DIODE 1SS119-25			
D615		8-719-911-19	DIODE 1SS119-25			
D616		8-719-911-19	DIODE 1SS119-25			
D617		8-719-911-19	DIODE 1SS119-25			
D618		8-719-911-19	DIODE 1SS119-25			
D619		8-719-911-19	DIODE 1SS119-25			
D620		8-719-911-19	DIODE 1SS119-25			
D621		8-719-911-19	DIODE 1SS119-25			
D622		8-719-510-64	DIODE S2LA20F			
D625		8-719-911-19	DIODE 1SS119-25			
D626		8-719-911-19	DIODE 1SS119-25			
D627		8-719-911-19	DIODE 1SS119-25			
D628		8-719-911-19	DIODE 1SS119-25			
D629		8-719-991-33	DIODE 1SS133T-77			
D634		8-719-510-64	DIODE S2LA20F			
D635		8-719-991-33	DIODE 1SS133T-77			
D636		8-719-511-40	DIODE S1VB40			
D637		8-719-991-33	DIODE 1SS133T-77			
D638		8-719-991-33	DIODE 1SS133T-77			
D642		8-719-510-64	DIODE D1NL20-TR			
			< FERRITE BEAD >			
FB601		1-410-396-41	FERRITE	0.45UH		
FB602		1-410-396-41	FERRITE	0.45UH		
FB603		1-410-396-41	FERRITE	0.45UH		
FB604		1-410-396-41	FERRITE	0.45UH		
			< IC >			
IC601		1-810-051-11	POWER MODULE DM-48			
IC602	⚠	8-749-010-64	PHOTO COUPLER PC123F2			
IC605		8-759-510-52	IC L4941BV			
			< COIL >			
L604		1-535-303-00	LEAD, JUMPER (5.0MM)			
L605		1-412-526-11	INDUCTOR	12UH		
L605		1-412-526-11	INDUCTOR	12UH		
L606		1-412-526-11	INDUCTOR	12UH		
L606		1-412-526-11	INDUCTOR	12UH		
			< TRANSFORMER >			
LF602	⚠	1-429-860-11	TRANSFORMER, LINE FILTER			
			< IC LINK >			
PS601	⚠	1-801-550-21	PROTECTOR MODULE	2.5 Amp		(MP-250)
PS602	⚠	1-801-550-21	PROTECTOR MODULE	2.5 Amp		(MP-250)
PS604	⚠	1-801-550-21	PROTECTOR MODULE	2.5 Amp		(MP-250)
PS605	⚠	1-801-549-21	PROTECTOR MODULE	4.0 Amp		(MP-400)
			< TRANSISTOR >			
Q601		8-729-032-87	TRANSISTOR 2SC4834NP-F09			
Q602		8-729-032-87	TRANSISTOR 2SC4834NP-F09			
Q603		8-729-119-78	TRANSISTOR 2SC2785-HFE			
Q604		8-729-200-21	TRANSISTOR 2SC2500-B			
Q605		8-729-119-78	TRANSISTOR 2SC2785-HFE			
Q608		8-729-200-21	TRANSISTOR 2SC2500-B			
Q610		8-729-119-76	TRANSISTOR 2SA1175-HFE			
Q611		8-729-119-78	TRANSISTOR 2SC2785-HFE			
Q612		8-729-119-76	TRANSISTOR 2SA1175-HFE			
Q615		8-729-200-21	TRANSISTOR 2SC2500-B			
Q621		8-729-200-21	TRANSISTOR 2SC2500-B			
			< RESISTOR >			
R601		1-202-933-61	FUSIBLE	0.1	10%	1/2W F
R604		1-216-369-00	METAL OXIDE	1	5%	2W F
R607		1-216-369-00	METAL OXIDE	1	5%	2W F
R608		1-247-887-00	CARBON	220K	5%	1/4W
R609		1-249-429-11	CARBON	10K	5%	1/4W F

The components identified by shading and marked ⚠ are critical for safety
Replace only with the part number specified.

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REF. NO.		PART.NO	DESCRIPTION			REMARK
R610		1-249-419-11	CARBON	1.5K	5%	1/4W F
R611		1-249-377-11	CARBON	0.47	5%	1/4W F
R614		1-247-807-31	CARBON	100	5%	1/4W
R616	⚠	1-202-961-11	CEMENTED	1.8	5%	10W
R618	⚠	1-202-961-11	CEMENTED	1.8	5%	10W
R619	⚠	1-214-937-00	CARBON	1M	5%	1/2W
R620	⚠	1-218-265-11	METAL	8.2M	5%	1W
R621		1-249-417-11	CARBON	1K	5%	1/4W F
R622		1-249-421-11	CARBON	2.2K	5%	1/4W
R623		1-249-430-11	CARBON	12K	5%	1/4W
R624		1-249-425-11	CARBON	4.7K	5%	1/4W
R625		1-247-815-91	CARBON	220	5%	1/4W
R626		1-247-863-91	CARBON	22K	5%	1/4W
R627		1-247-815-91	CARBON	220	5%	1/4W
R628		1-247-885-00	CARBON	180K	5%	1/4W
R636		1-207-905-00	WIREWOUND	0.27	10%	2W F
R639		1-247-791-91	CARBON	22	5%	1/4W
R640		1-247-791-91	CARBON	22	5%	1/4W
R641		1-247-791-91	CARBON	22	5%	1/4W
R642		1-247-791-91	CARBON	22	5%	1/4W
R651		1-215-880-00	METAL OXIDE	10	5%	2W F
R652		1-247-891-00	CARBON	330K	5%	1/4W
R653		1-247-891-00	CARBON	330K	5%	1/4W
R654		1-247-891-00	CARBON	330K	5%	1/4W
R655		1-247-891-00	CARBON	330K	5%	1/4W
R656		1-249-439-11	CARBON	68K	5%	1/4W
R657		1-249-429-11	CARBON	10K	5%	1/4W
R658		1-249-421-11	CARBON	2.2K	5%	1/4W
R659		1-249-425-11	CARBON	4.7K	5%	1/4W
R660		1-249-429-11	CARBON	10K	5%	1/4W
R661		1-249-421-11	CARBON	2.2K	5%	1/4W
R662		1-249-421-11	CARBON	2.2K	5%	1/4W
R663		1-249-429-11	CARBON	10K	5%	1/4W
R664		1-249-429-11	CARBON	10K	5%	1/4W
R667		1-249-377-11	CARBON	0.47	5%	1/4W F
R670		1-249-421-11	CARBON	2.2K	5%	1/4W
R682		1-247-688-11	CARBON	10	5%	1/4W F
			< RELAY >			
RY601	⚠	1-755-167-11	RELAY, AC POWER			
RY602	⚠	1-755-167-11	RELAY, AC POWER			
			< TRANSFORMER >			
T601	⚠	1-429-844-11	TRANSFORMER, CONVERTER (PIT)			
T602	⚠	1-427-864-11	TRANSFORMER, CONVERTER (PRT)			
T603	⚠	1-429-952-11	TRANSFORMER, POWER			
			< THERMISTOR >			
THP601	⚠	1-809-827-11	THERMISTOR, POSITIVE			
VDR601		1-810-977-21	VARISTOR ERZV10D621			
VDR601		1-810-977-21	VARISTOR ERZV10D621			
		*A-1638-092-A	C BOARD COMPLETE			
			**********			
			< CAPACITOR >			
C701		1-107-666-11	ELECT	1MF	20%	350V
C702		1-107-666-11	ELECT	1MF	20%	350V
C703		1-107-666-11	ELECT	1MF	20%	350V
C704		1-102-129-00	CERAMIC	0.01MF	10%	50V
C705		1-126-935-11	ELECT	470MF	20%	16V
C706		1-126-935-11	ELECT	470MF	20%	16V
C708		1-126-935-11	ELECT	470MF	20%	16V
C709		1-102-157-00	CERAMIC	560PF	10%	500V
C710		1-102-157-00	CERAMIC	560PF	10%	500V
C711		1-102-157-00	CERAMIC	560PF	10%	500V
C712		1-126-965-11	ELECT	22MF	20%	50V
C713		1-162-116-00	CERAMIC	680PF	10%	2KV
C714		1-162-115-00	CERAMIC	330PF	10%	2KV
C716		1-162-116-00	CERAMIC	680PF	10%	2KV
C717		1-102-129-00	CERAMIC	0.01MF	10%	50V
C718		1-102-129-00	CERAMIC	0.01MF	10%	50V
C719		1-126-960-11	ELECT	1MF	20%	50V
C720		1-107-652-11	ELECT	10MF	20%	250V
C723		1-162-116-00	CERAMIC	680PF	10%	2KV
			< CONNECTOR >			
CN0004		1-695-915-11	TAB (CONTACT)			
CN0403		*1-564-512-11	PLUG, CONNECTOR 9P			
CN0421		*1-508-767-00	PIN, CONNECTOR (5MM PITCH) 5P			
			< DIODE >			
D701		8-719-991-33	DIODE 1SS133T-77			
D702		8-719-901-83	DIODE 1SS83			
D703		8-719-901-83	DIODE 1SS83			
D704		8-719-901-83	DIODE 1SS83			
D705		8-719-991-33	DIODE 1SS133T-77			
D706		8-719-908-03	DIODE GP08D			
D707		8-719-991-33	DIODE 1SS133T-77			
D712		8-719-923-60	DIODE MTZJ-T-77-9.1A			
D714		8-719-921-88	DIODE MTZJ-13B			
D715		8-719-911-19	DIODE 1SS119-25T			
D716		8-719-911-19	DIODE 1SS119-25T			
D717		8-719-911-19	DIODE 1SS119-25T			
D718		8-719-982-96	DIODE MTZJ-T-77-2.2A			
D719		8-719-982-96	DIODE MTZJ-T-77-2.2A			
D720		8-719-901-83	DIODE 1SS83			
D721		8-719-901-83	DIODE 1SS83			
D722		8-719-901-83	DIODE 1SS83			
D723		8-719-901-83	DIODE 1SS83			
D724		8-719-031-34	DIODE RGP02-20EG23			
			< IC >			
IC703		8-759-360-83	IC TDA6111Q/N4			
		4-382-854-11	SCREW (M3X10), P, SW (+) (IC703)			
IC704		8-759-360-83	IC TDA6111Q/N4			
		4-382-854-11	SCREW (M3X10), P, SW (+) (IC704)			
IC705		8-759-360-83	IC TDA6111Q/N4			
		4-382-854-11	SCREW (M3X10), P, SW (+) (IC705)			

The components identified by shading and marked ⚠ are critical for safety
Replace only with the part number specified.

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REF. NO.	PART.NO	DESCRIPTION				REMARK
		< CRT SOCKET >				
J701	⚠ 1-526-990-21	SOCKET, CRT				
		< COIL >				
L701	1-410-671-31	INDUCTOR	47UH			
L704	1-408-599-31	INDUCTOR	4.7UH			
L705	1-408-599-31	INDUCTOR	4.7UH			
L706	1-408-599-31	INDUCTOR	4.7UH			
L709	1-408-603-31	INDUCTOR	10UH			
L710	1-412-528-11	INDUCTOR	18UH			
		< TRANSISTOR >				
Q701	8-729-255-12	TRANSISTOR 2SC2551O				
Q702	8-729-255-12	TRANSISTOR 2SC2551O				
Q703	8-729-255-12	TRANSISTOR 2SC2551O				
Q704	8-729-119-76	TRANSISTOR 2SA1175-HFE				
Q705	8-729-029-56	TRANSISTOR DTA144ESA				
Q706	8-729-119-78	TRANSISTOR 2SC2785-HFE				
Q707	8-729-119-76	TRANSISTOR 2SA1175-HFE				
		< RESISTOR >				
R701	1-249-420-11	CARBON	1.8K	5%	1/4W	
R702	1-249-425-11	CARBON	4.7K	5%	1/4W	
R703	1-249-435-11	CARBON	33K	5%	1/4W	
R704	1-249-429-11	CARBON	10K	5%	1/4W	
R705	1-249-430-11	CARBON	12K	5%	1/4W	
R706	1-247-863-91	CARBON	22K	5%	1/4W	
R707	1-247-863-91	CARBON	22K	5%	1/4W	
R708	1-247-863-91	CARBON	22K	5%	1/4W	
R709	1-249-416-11	CARBON	820	5%	1/4W	
R710	1-249-416-11	CARBON	820	5%	1/4W	
R711	1-249-416-11	CARBON	820	5%	1/4W	
R712	1-249-421-11	CARBON	2.2K	5%	1/4W	
R713	1-249-417-11	CARBON	1K	5%	1/4W	
R714	1-249-417-11	CARBON	1K	5%	1/4W	
R715	1-249-417-11	CARBON	1K	5%	1/4W	
R716	1-249-417-11	CARBON	1K	5%	1/4W	
R717	1-249-417-11	CARBON	1K	5%	1/4W	
R718	1-249-417-11	CARBON	1K	5%	1/4W	
R719	1-249-417-11	CARBON	1K	5%	1/4W	
R720	1-215-926-00	METAL OXIDE	33K	5%	3W	F
R721	1-215-926-00	METAL OXIDE	33K	5%	3W	F
R722	1-215-926-00	METAL OXIDE	33K	5%	3W	F
R723	1-249-408-11	CARBON	180	5%	1/4W	
R724	1-249-408-11	CARBON	180	5%	1/4W	
R725	1-249-408-11	CARBON	180	5%	1/4W	
R726	1-202-565-00	SOLID	470	20%	1/2W	
R727	1-202-565-00	SOLID	470	20%	1/2W	
R728	1-202-565-00	SOLID	470	20%	1/2W	
R729	1-249-424-11	CARBON	3.9K	5%	1/4W	
R730	1-249-424-11	CARBON	3.9K	5%	1/4W	
R731	1-249-424-11	CARBON	3.9K	5%	1/4W	
R732	1-202-549-00	SOLID	100	20%	1/2W	
R733	1-247-863-91	CARBON	22K	5%	1/4W	
R734	1-202-549-00	SOLID	100	20%	1/2W	
R735	1-249-416-11	CARBON	820	5%	1/4W	
R741	1-202-884-11	SOLID	820K	20%	1/2W	
R743	1-202-884-11	SOLID	820K	20%	1/2W	
R748	1-216-349-00	METAL OXIDE	1	5%	1W	F
R749	1-216-349-00	METAL OXIDE	1	5%	1W	F
R750	1-249-429-11	CARBON	10K	5%	1/4W	
R751	1-249-438-11	CARBON	56K	5%	1/4W	
R752	1-249-417-11	CARBON	1K	5%	1/4W	F
R753	1-215-911-11	METAL OXIDE	100	5%	3W	F
R754	1-202-841-00	SOLID	180K	20%	1/2W	
R755	1-249-429-11	CARBON	10K	5%	1/4W	
R756	1-249-432-11	CARBON	18K	5%	1/4W	
R757	1-249-431-11	CARBON	15K	5%	1/4W	
		< VARIABLE RESISTOR >				
RV701	1-230-641-11	RES, ADJ, METAL GLAZE 2.2M				
RV704	1-241-656-21	RES, ADJ, METAL FILM 110M				
**********						
	*A-1640-244-A	D BOARD COMPLETE (KV-28WF3A/28WF3B/28WF3D/				
		********** KV-28WF3E/28WF3K)				
	*A-1640-305-A	D BOARD COMPLETE (KV-32WF3A/32WF3B/32WF3D/				
		********** KV-32WF3E/32WF3K)				
	4-200-399-01	SPACER, IC				
	4-201-023-01	SPACER, INSULATING				
	4-202-373-01	SPRING, IC				
	4-202-710-01	SPACER, INSULATING				
	4-382-854-11	SCREW (M3X10), P, SW (+)				
		< CAPACITOR >				
C101	1-126-965-11	ELECT	22MF	20%	50V	
C236	1-136-165-00	FILM	0.1MF	5%	50V	
C237	1-136-165-00	FILM	0.1MF	5%	50V	
C238	1-126-967-11	ELECT	47MF	20%	16V	
C241	1-126-967-11	ELECT	47MF	20%	16V	
C242	1-126-953-11	ELECT	2200MF	20%	35V	
C243	1-136-165-00	FILM	0.1MF	5%	50V	
C244	1-126-953-11	ELECT	2200MF	20%	35V	
C245	1-136-165-00	FILM	0.1MF	5%	50V	
C260	1-126-933-11	ELECT	100MF	20%	16V	
C261	1-126-933-11	ELECT	100MF	20%	16V	
C262	1-104-665-11	ELECT	100MF	20%	25V	
C263	1-136-165-00	FILM	0.1MF	5%	50V	
C264	1-104-661-91	ELECT	330MF	20%	16V	
C265	1-136-165-00	FILM	0.1MF	5%	50V	
C266	1-104-665-11	ELECT	100MF	20%	25V	
C267	1-162-318-11	CERAMIC	0.001MF	10%	500V	
C268	1-162-318-11	CERAMIC	0.001MF	10%	500V	
C269	1-126-967-11	ELECT	47MF	20%	16V	
C271	1-126-965-11	ELECT	22MF	20%	50V	
C273	1-136-161-00	FILM	0.047MF	5%	50V	
C274	1-126-961-11	ELECT	2.2MF	20%	50V	
C275	1-126-961-11	ELECT	2.2MF	20%	50V	
C276	1-126-967-11	ELECT	47MF	20%	16V	
C277	1-126-934-11	ELECT	220MF	20%	16V	
C278	1-107-714-11	ELECT	10MF	20%	16V	
C280	1-136-169-00	FILM	0.22MF	5%	50V	
C281	1-126-967-11	ELECT	47MF	20%	16V	

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REF. NO.	PART.NO	DESCRIPTION				REMARK
C283	1-136-169-00	FILM	0.22MF	5%	50V	
C286	1-126-968-11	ELECT	100MF	20%	50V	
C620	1-126-964-11	ELECT	10MF	20%	50V	
C639	1-126-964-11	ELECT	10MF	20%	50V	
C652	1-136-171-00	FILM	0.33MF	5%	50V	
C653	1-126-965-11	ELECT	22MF	20%	50V	
C654	1-104-664-11	ELECT	47MF	20%	25V	
C655	1-104-664-11	ELECT	47MF	20%	25V	
C656	1-126-967-11	ELECT	47MF	20%	16V	
C657	1-136-165-00	FILM	0.1MF	5%	50V	
C658	1-136-165-00	FILM	0.1MF	5%	50V	
C659	1-136-165-00	FILM	0.1MF	5%	50V	
C660	1-136-164-00	FILM	0.082MF	5%	50V	
C666	1-104-661-91	ELECT	330MF	20%	16V	
C667	1-136-165-00	FILM	0.1MF	5%	50V	
C668	1-136-165-00	FILM	0.1MF	5%	50V	
C669	1-126-933-11	ELECT	100MF	20%	16V	
C670	1-136-165-00	FILM	0.1MF	5%	50V	
C671	1-136-165-00	FILM	0.1MF	5%	50V	
C672	1-126-967-11	ELECT	47MF	20%	16V	
		(KV-32WF3A/32WF3B/32WF3D/32WF3E/32WF3K)				
C801	1-123-024-21	ELECT	33MF		160V	
C802	1-136-207-11	FILM	0.047MF	10%	250V	
C805	1-102-212-00	CERAMIC	820PF	10%	500V	
C807	1-162-129-00	CERAMIC	150PF	10%	2KV	
C808	1-162-116-00	CERAMIC	680PF	10%	2KV	
C809	1-162-116-00	CERAMIC	680PF	10%	2KV	
C810	1-136-558-11	FILM	0.0039MF	10%	400V	
C811	1-109-948-11	FILM	0.015MF	3%	2.5KV	
C812	1-129-720-00	FILM	0.033MF	5%	630V	
C813	1-109-844-11	FILM	0.68MF	5%	400V	
		(KV-28WF3A/28WF3B/28WF3D/28WF3E/28WF3K)				
	1-107-804-11	FILM	0.82MF	5%	400V	
		(KV-32WF3A/32WF3B/32WF3D/32WF3E/32WF3K)				
C814	1-129-702-00	FILM	0.001MF	10%	400V	
C816	1-109-844-11	FILM	0.68MF	5%	400V	
C817	1-136-759-11	FILM	0.039MF	5%	630V	
C819	1-137-102-11	FILM	0.022MF	10%	250V	
		(KV-28WF3A/28WF3B/28WF3D/28WF3E/28WF3K)				
	1-137-104-11	FILM	0.033MF	10%	250V	
		(KV-32WF3A/32WF3B/32WF3D/32WF3E/32WF3K)				
C822	1-126-967-11	ELECT	47MF	20%	50V	
C823	1-102-129-00	CERAMIC	0.01MF	10%	50V	
		(KV-28WF3A/28WF3B/28WF3D/28WF3E/28WF3K)				
	1-136-497-91	FILM	0.1MF	5%	50V	
		(KV-32WF3A/32WF3B/32WF3D/32WF3E/32WF3K)				
C824	1-102-228-00	CERAMIC	470PF	10%	500V	
C825	1-126-964-11	ELECT	10MF	20%	50V	
C827	1-102-228-00	CERAMIC	470PF	10%	500V	
C828	1-102-030-00	CERAMIC	330PF	10%	500V	
C835	1-107-655-11	ELECT	47MF	20%	250V	
C836	1-102-228-00	CERAMIC	470PF	10%	500V	
C837	1-102-228-00	CERAMIC	470PF	10%	500V	
C838	1-102-228-00	CERAMIC	470PF	10%	500V	
C841	1-106-375-12	MYLAR	0.022MF	10%	250V	
C842	1-110-186-81	MYLAR	0.0047MF	10%	400V	
		(KV-28WF3A/28WF3B/28WF3D/28WF3E/28WF3K)				
C846	1-107-909-11	ELECT	47MF	20%	50V	
C848	1-162-129-00	CERAMIC	150PF	10%	2KV	
		(KV-32WF3A/32WF3B/32WF3D/32WF3E/32WF3K)				
C849	1-162-129-00	CERAMIC	150PF	10%	2KV	
		(KV-32WF3A/32WF3B/32WF3D/32WF3E/32WF3K)				
C851	1-129-702-00	FILM	0.001MF	10%	400V	
C852	1-126-968-11	ELECT	100MF	20%	50V	
C854	1-102-129-00	CERAMIC	0.01MF	10%	50V	
C855	1-126-941-11	ELECT	470MF	20%	25V	
C856	1-102-129-00	CERAMIC	0.01MF	10%	50V	
C857	1-126-941-11	ELECT	470MF	20%	25V	
C860	1-106-220-00	MYLAR	0.1MF	10%	100V	
C861	1-137-423-11	MYLAR	0.15MF	10%	100V	
C862	1-130-789-00	FILM	1MF	5%	100V	
C863	1-136-165-00	FILM	0.1MF	5%	50V	
		(KV-32WF3A/32WF3B/32WF3D/32WF3E/32WF3K)				
C866	1-137-040-11	FILM	0.0022MF	10%	400V	
C871	1-110-189-81	MYLAR	0.0082MF	10%	400V	
		(KV-28WF3A/28WF3B/28WF3D/28WF3E/28WF3K)				
C872	1-110-175-81	MYLAR	0.1MF	10%	100V	
		(KV-28WF3A/28WF3B/28WF3D/28WF3E/28WF3K)				
C873	1-162-115-00	CERAMIC	330PF	10%	2KV	
		(KV-32WF3A/32WF3B/32WF3D/32WF3E/32WF3K)				
C874	1-164-645-11	CERAMIC	1000PF	10%	500V	
		(KV-28WF3A/28WF3B/28WF3D/28WF3E/28WF3K)				
	1-137-493-11	FILM	0.0047MF	5%	630V	
		(KV-32WF3A/32WF3B/32WF3D/32WF3E/32WF3K)				
C876	1-136-298-00	FILM	0.0033MF	2%	100V	
C878	1-110-175-81	MYLAR	0.1MF	10%	100V	
		(KV-28WF3A/28WF3B/28WF3D/28WF3E/28WF3K)				
C879	1-102-973-00	CERAMIC	100PF	5%	50V	
		(KV-32WF3A/32WF3B/32WF3D/32WF3E/32WF3K)				
C891	1-137-040-11	FILM	0.0022MF	10%	400V	
		(KV-32WF3A/32WF3B/32WF3D/32WF3E/32WF3K)				
C894	1-102-978-00	CERAMIC	220PF	5%	50V	
C900	1-101-810-00	CERAMIC	100PF	5%	500V	
C901	1-101-810-00	CERAMIC	100PF	5%	500V	
C902	1-137-372-11	FILM	0.022MF	5%	50V	
C902	1-137-372-11	FILM	0.022MF	5%	50V	
C905	1-126-964-11	ELECT	10MF	20%	50V	
C907	1-126-960-11	ELECT	1MF	20%	50V	
C908	1-126-960-11	ELECT	1MF	20%	50V	
C910	1-126-967-11	ELECT	47MF	20%	50V	
C911	1-126-967-11	ELECT	47MF	20%	50V	
C1601	1-102-973-00	CERAMIC	100PF	5%	50V	
		(KV-32WF3A/32WF3B/32WF3D/32WF3E/32WF3K)				
C1602	1-136-161-00	FILM	0.047MF	5%	50V	
		(KV-32WF3A/32WF3B/32WF3D/32WF3E/32WF3K)				
C1603	1-102-129-00	CERAMIC	0.01MF	10%	50V	
		(KV-32WF3A/32WF3B/32WF3D/32WF3E/32WF3K)				
C1604	1-129-702-00	FILM	0.001MF	5%	630V	
		(KV-32WF3A/32WF3B/32WF3D/32WF3E/32WF3K)				
C1605	1-136-205-11	FILM	0.022MF	10%	400V	
		(KV-32WF3A/32WF3B/32WF3D/32WF3E/32WF3K)				
C1606	1-136-250-11	FILM	0.001MF	2%	100V	
		(KV-32WF3A/32WF3B/32WF3D/32WF3E/32WF3K)				
C1607	1-136-207-11	FILM	0.047MF	10%	250V	
		(KV-32WF3A/32WF3B/32WF3D/32WF3E/32WF3K)				

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REF. NO.	PART.NO	DESCRIPTION	REMARK
C1616	1-137-535-11	FILM 0.0018MF 5% 630V	(KV-32WF3A/32WF3B/32WF3D/32WF3E/32WF3K)
C1619	1-110-175-81	MYLAR 0.1MF 10% 100V	(KV-28WF3A/28WF3B/28WF3D/28WF3E/28WF3K)
	1-129-717-00	FILM 0.018MF 5% 630V	(KV-32WF3A/32WF3B/32WF3D/32WF3E/32WF3K)
C1620	1-535-143-61	LEAD, JUMPER (5.0MM)	(KV-28WF3A/28WF3B/28WF3D/28WF3E/28WF3K)
	1-102-110-00	CERAMIC 220PF 10% 50V	(KV-32WF3A/32WF3B/32WF3D/32WF3E/32WF3K)
C1621	1-110-190-81	FILM 0.01MF 10% 400V	(KV-28WF3A/28WF3B/28WF3D/28WF3E/28WF3K)
	1-137-493-11	FILM 0.0047MF 5% 630V	(KV-32WF3A/32WF3B/32WF3D/32WF3E/32WF3K)
C1622	1-130-785-11	FILM 0.47MF 10% 100V	(KV-32WF3A/32WF3B/32WF3D/32WF3E/32WF3K)
C1624	1-101-004-00	CERAMIC 0.01MF 50V	(KV-32WF3A/32WF3B/32WF3D/32WF3E/32WF3K)
C1625	1-126-767-11	ELECT 1000MF 20% 16V	(KV-32WF3A/32WF3B/32WF3D/32WF3E/32WF3K)
C1627	1-136-244-11	FILM 0.1MF 5% 50V	(KV-32WF3A/32WF3B/32WF3D/32WF3E/32WF3K)
C1628	1-136-244-11	FILM 0.1MF 5% 50V	(KV-32WF3A/32WF3B/32WF3D/32WF3E/32WF3K)
C1629	1-137-369-91	FILM 0.0068MF 5% 50V	(KV-28WF3A/28WF3B/28WF3D/28WF3E/28WF3K)
C1632	1-136-203-11	FILM 0.01MF 10% 250V	
C1633	1-126-964-11	ELECT 10MF 20% 50V	(KV-32WF3A/32WF3B/32WF3D/32WF3E/32WF3K)
C1818	1-129-928-00	FILM 0.0027MF 5% 630V	(KV-32WF3A/32WF3B/32WF3D/32WF3E/32WF3K)
C2701	1-126-964-11	ELECT 10MF 20% 50V	
C2702	1-104-664-11	ELECT 47MF 20% 25V	
C2706	1-102-820-00	CERAMIC 330PF 5% 50V	
		< CONNECTOR >	
CN0001	*1-564-520-11	PLUG, CONNECTOR 5P	
CN0002	*1-568-878-51	PIN, CONNECTOR 3P	
CN0004	1-568-878-51	PIN, CONNECTOR 3P	
CN0005	1-695-915-11	TAB (CONTACT)	
CN0101	*1-573-296-21	CONNECTOR, BOARD TO BOARD 10P	
CN0102	1-695-297-11	CONNECTOR, BOARD TO BOARD 20P	
CN0521	*1-508-767-00	PIN, CONNECTOR (5MM PITCH) 5P	
CN0722 ⚠	*1-580-844-11	PIN, CONNECTOR (POWER)	
CN0723 ⚠	*1-695-292-11	PIN, CONNECTOR (POWER)	
CN0741	*1-564-512-11	PLUG, CONNECTOR 9P	
CN0743	*1-564-596-11	PLUG, CONNECTOR 15P	
CN0745	1-695-298-11	CONNECTOR, BOARD TO BOARD 40P	
CN0746	*1-568-879-11	PIN, CONNECTOR 4P	
CN3133	1-568-882-51	PIN, CONNECTOR 7P	
		< DIODE >	
D101	8-719-982-27	DIODE MTZJ-33C	
D236	8-719-911-19	DIODE 1SS119-25	
D237	8-719-911-19	DIODE 1SS119-25	
D238	8-719-911-19	DIODE 1SS119-25	
D239	8-719-911-19	DIODE 1SS119-25	
D262	8-719-911-19	DIODE 1SS119-25	
D264	8-719-911-19	DIODE 1SS119-25	
D276	8-719-911-19	DIODE 1SS119-25	
D278	8-719-911-19	DIODE 1SS119-25	
D279	8-719-911-19	DIODE 1SS119-25	
D280	8-719-911-19	DIODE 1SS119-25	
D281	8-719-911-19	DIODE 1SS119-25	
D282	8-719-911-19	DIODE 1SS119-25	
D613	8-719-911-19	DIODE 1SS119-25	
D631	8-719-911-19	DIODE 1SS119-25	
D633	1-247-807-31	CARBON 100 5% 1/4W	
D640	8-719-911-19	DIODE 1SS119-25	
D641	8-719-911-19	DIODE 1SS119-25	
D802	8-719-979-99	DIODE ERD08M-15	
D803	8-719-043-14	DIODE ESAC39M-06C	
D804	8-719-971-20	DIODE ERC38-06	
D805	8-719-908-03	DIODE GP08D	
D806	8-719-908-03	DIODE GP08D	
D810	8-719-979-85	DIODE EGP20G	
D811	8-719-302-43	DIODE EL1Z	
D812	8-719-510-64	DIODE S2LA20F	
D813	8-719-510-64	DIODE S2LA20F	
D814	8-719-908-03	DIODE GP08D	
D815	8-719-929-15	DIODE HZS9.1NB2	
D816	8-719-110-41	DIODE RD15ES-B2	
D817	8-719-911-19	DIODE 1SS119-25	
D818	8-719-911-19	DIODE 1SS119-25	
D819	8-719-911-19	DIODE 1SS119-25	
D871	8-719-921-20	DIODE 1SS119-25	(KV-28WF3A/28WF3B/28WF3D/ KV-28WF3E/28WF3K)
D873	8-719-911-19	DIODE 1SS119-25	
D874	8-719-911-19	DIODE 1SS119-25	
D901	8-719-302-45	DIODE SEL1210S-CD	
	*4-203-258-11	HOLDER, LED (D901)	
D1602	8-719-911-19	DIODE 1SS119-25	(KV-32WF3A/32WF3B/32WF3D/ KV-32WF3E/32WF3K)
D1603	8-719-911-19	DIODE 1SS119-25	(KV-32WF3A/32WF3B/32WF3D/ KV-32WF3E/32WF3K)
D1604	8-719-970-87	DIODE ERA38-06	(KV-32WF3A/32WF3B/32WF3D/ KV-32WF3E/32WF3K)
D1605	8-719-970-87	DIODE ERA38-06	(KV-32WF3A/32WF3B/32WF3D/ KV-32WF3E/32WF3K)
D1609	8-719-979-85	DIODE EGP20G	
D1610	1-535-303-00	LEAD, JUMPER (5.0MM)	(KV-32WF3A/32WF3B/32WF3D/32WF3E/32WF3K)
D1611	8-719-911-19	DIODE 1SS119-25	
D1612	8-719-110-08	DIODE RD8.2ES-B2	(KV-32WF3A/32WF3B/32WF3D/ KV-32WF3E/32WF3K)
D2701	8-719-911-19	DIODE 1SS119-25	
D2702	8-719-911-19	DIODE 1SS119-25	
		< CONNECTOR >	
DY1	*1-580-798-11	CONNECTOR PIN (DY) 6P	
		< FUSE >	
F601	⚠ 1-532-505-41	FUSE 5 AMP 250V	
	⚠ *1-533-725-11	HOLDER, FUSE (F601)	

D

The components identified by shading and marked ⚠ are critical for safety
Replace only with the part number specified.

REF. NO.	PART.NO	DESCRIPTION	REMARK
		< FERRITE BEAD >	
FB201	1-535-303-00	LEAD, JUMPER (5.0MM)	
FB202	1-410-396-41	FERRITE 0.45UH	
FB203	1-410-397-21	FERRITE 1.1UH	
FB801	1-422-613-11	COIL, AIR CORE	
FB802	1-410-396-41	FERRITE 0.45UH	
		< IC >	
IC236	8-759-190-89	IC TDA7265	
IC260	8-759-330-93	IC TDA7309	
IC261	8-759-502-21	IC TDA2822M	
IC604	8-759-513-71	IC PQ05RF21	
	4-202-373-01	SPRING, IC (IC604)	
IC606	8-759-991-43	IC LM78L12ACZ	
IC607	8-759-513-71	IC PQ05RF21	
IC801	8-759-103-93	IC UPC393C	
IC802	8-759-192-71	IC STV9379	
IC900	8-742-014-11	HYB IC SBX1981-51	
IC1601	8-759-103-93	IC UPC393C	(KV-32WF3A/32WF3B/32WF3D/ KV-32WF3E/32WF3K)
IC1603	8-759-103-93	IC UPC393C	(KV-32WF3A/32WF3B/32WF3D/ KV-32WF3E/32WF3K)
IC2701	8-759-603-37	IC M5216P	
		< SOCKET >	
J900	1-764-606-11	JACK	
J901	1-568-678-11	TERMINAL BLOCK, S 3P	
J1200	1-770-218-11	JACK, PIN	
		< COIL >	
L601	1-535-303-00	LEAD,JUMPER (5.0MM)	
L602	1-412-525-31	INDUCTOR 10UH	
L603	1-412-525-31	INDUCTOR 10UH	
L801	1-459-474-11	INDUCTOR 0UH	
L802	1-459-474-11	INDUCTOR 0UH	
L803	1-535-143-11	LEAD, JUMPER (10.0MM)	
L806	1-459-592-11	COIL (WITH CORE) (PMC)	
L807	1-412-524-11	INDUCTOR 8.2UH	
L808	1-535-303-00	LEAD, JUMPER (5.0MM)	
L809	1-412-533-21	INDUCTOR 47UH	
L810	1-412-524-11	INDUCTOR 8.2UH	
L811	1-459-104-00	COIL, WITH CORE	
L813	1-406-989-21	INDUCTOR 0UH	(KV-28WF3A/28WF3B/28WF3D/28WF3E/28WF3K)
L814	1-410-397-21	FERRITE 1.1UH	
L815	1-412-523-11	INDUCTOR 6.8UH	
L815	1-412-523-41	INDUCTOR 6.8UH	
L816	1-408-947-00	INDUCTOR 2.2MMH	
L817	1-535-303-00	LEAD, JUMPER (5.0MM)	
L900	1-408-603-31	INDUCTOR 10UH	
L901	1-408-603-31	INDUCTOR 10UH	
L902	1-249-417-11	CARBON 1K 5% 1/4W	
L903	1-249-417-11	CARBON 1K 5% 1/4W	
L1601	1-535-303-00	LEAD, JUMPER (5.0MM)	(KV-32WF3A/32WF3B/32WF3D/32WF3E/32WF3K)
L1602	1-459-474-11	INDUCTOR 0UH	(KV-32WF3A/32WF3B/32WF3D/32WF3E/32WF3K)
L1604	1-406-988-21	INDUCTOR 0UH	(KV-28WF3A/28WF3B/28WF3D/28WF3E/28WF3K)
L1605	1-406-988-21	INDUCTOR 0UH	(KV-28WF3A/28WF3B/28WF3D/28WF3E/28WF3K)
	1-459-104-00	COIL, WITH CORE	(KV-32WF3A/32WF3B/32WF3D/32WF3E/32WF3K)
L1622	1-406-674-11	INDUCTOR 0UH	(KV-28WF3A/28WF3B/28WF3D/28WF3E/28WF3K)
	1-406-675-11	INDUCTOR 0UH	(KV-32WF3A/32WF3B/32WF3D/32WF3E/32WF3K)
		< IC LINK >	
PS1601	1-535-143-61	LEAD, JUMPER (5.0MM)	(KV-28WF3A/28WF3B/28WF3D/28WF3E/28WF3K)
⚠	1-532-637-11	LINK, IC 1.0A (ICP-F25)	(KV-32WF3A/32WF3B/32WF3D/32WF3E/32WF3K)
		< TRANSISTOR >	
Q276	8-729-030-02	TRANSISTOR DTC144ESA	
Q277	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q278	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q279	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q280	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q281	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q282	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q606	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q607	8-729-029-56	TRANSISTOR DTA144ESA	
Q614	8-729-029-56	TRANSISTOR DTA144ESA	
Q616	8-729-029-66	TRANSISTOR DTC114ESA	
Q617	8-729-029-66	TRANSISTOR DTC114ESA	
Q618	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q620	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q624	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q801	8-729-119-80	TRANSISTOR 2SC2688-LK	
Q802	8-729-042-94	TRANSISTOR BU2530AL	
Q803	8-729-039-68	TRANSISTOR IRF620	
Q804	8-729-039-68	TRANSISTOR IRF620	
Q1601	8-729-119-78	TRANSISTOR 2SC2785-HFE	(KV-32WF3A/32WF3B/32WF3D/32WF3E/32WF3K)
Q1602	8-729-119-78	TRANSISTOR 2SC2785-HFE	(KV-32WF3A/32WF3B/32WF3D/32WF3E/32WF3K)
Q1603	8-729-043-95	TRANSISTOR 2SC3840(3)	(KV-32WF3A/32WF3B/32WF3D/32WF3E/32WF3K)
Q1610	8-729-119-78	TRANSISTOR 2SC1740S-RT	
Q1611	8-729-017-06	TRANSISTOR 2SC4793	(KV-28WF3A/28WF3B/28WF3D/28WF3E/28WF3K)
	8-729-039-68	TRANSISTOR IRF620	(KV-32WF3A/32WF3B/32WF3D/32WF3E/32WF3K)
Q2701	8-729-119-78	TRANSISTOR 2SC2785-HFE	
		< RESISTOR >	
R236	1-249-424-11	CARBON 3.9K 5% 1/4W	
R237	1-249-417-11	CARBON 1K 5% 1/4W	
R239	1-249-424-11	CARBON 3.9K 5% 1/4W	
R240	1-249-417-11	CARBON 1K 5% 1/4W	
R244	1-249-413-11	CARBON 470 5% 1/4W	
R245	1-249-430-11	CARBON 12K 5% 1/4W	
R246	1-249-430-11	CARBON 12K 5% 1/4W	

REF. NO.	PART.NO	DESCRIPTION				REMARK
R247	1-249-413-11	CARBON	470	5%	1/4W	
R248	1-249-425-11	CARBON	4.7K	5%	1/4W	
R249	1-216-357-00	METAL OXIDE	4.7	5%	1W	F
R250	1-216-357-00	METAL OXIDE	4.7	5%	1W	F
R251	1-249-429-11	CARBON	10K	5%	1/4W	
R252	1-249-429-11	CARBON	10K	5%	1/4W	
R255	1-249-411-11	CARBON	330	5%	1/4W	
R256	1-249-411-11	CARBON	330	5%	1/4W	
R260	1-247-863-91	CARBON	22K	5%	1/4W	
R261	1-247-863-91	CARBON	22K	5%	1/4W	
R262	1-249-421-11	CARBON	2.2K	5%	1/4W	
R263	1-249-421-11	CARBON	2.2K	5%	1/4W	
R264	1-212-857-00	FUSIBLE	10	5%	1/4W	F
R265	1-249-389-11	CARBON	4.7	5%	1/4W	F
R266	1-249-389-11	CARBON	4.7	5%	1/4W	F
R267	1-247-815-91	CARBON	220	5%	1/4W	
R268	1-247-815-91	CARBON	220	5%	1/4W	
R269	1-249-415-11	CARBON	680	5%	1/4W	
R270	1-249-415-11	CARBON	680	5%	1/4W	
R271	1-247-742-11	CARBON	180	5%	1/2W	F
R276	1-535-303-00	LEAD, JUMPER (5.0MM)				
R277	1-249-419-11	CARBON	1.5K	5%	1/4W	
R278	1-249-441-11	CARBON	100K	5%	1/4W	
R279	1-249-429-11	CARBON	10K	5%	1/4W	
R280	1-249-425-11	CARBON	4.7K	5%	1/4W	
R281	1-249-437-11	CARBON	47K	5%	1/4W	
R282	1-249-430-11	CARBON	12K	5%	1/4W	
R283	1-249-429-11	CARBON	10K	5%	1/4W	
R284	1-249-432-11	CARBON	18K	5%	1/4W	
R285	1-249-425-11	CARBON	4.7K	5%	1/4W	
R286	1-249-421-11	CARBON	2.2K	5%	1/4W	
R287	1-249-412-11	CARBON	390	5%	1/4W	
R288	1-249-421-11	CARBON	2.2K	5%	1/4W	
R289	1-249-421-11	CARBON	2.2K	5%	1/4W	
R290	1-247-807-31	CARBON	100	5%	1/4W	
R291	1-249-421-11	CARBON	2.2K	5%	1/4W	
R292	1-249-429-11	CARBON	10K	5%	1/4W	
R293	1-249-429-11	CARBON	10K	5%	1/4W	
R294	1-249-429-11	CARBON	10K	5%	1/4W	
R295	1-247-885-00	CARBON	180K	5%	1/4W	
R296	1-247-885-00	CARBON	180K	5%	1/4W	
R297	1-247-807-31	CARBON	100	5%	1/4W	
R298	1-247-807-31	CARBON	100	5%	1/4W	
R630	1-249-419-11	CARBON	1.5K	5%	1/4W	
R631	1-215-477-00	METAL	220K	1%	1/4W	
R632	1-249-416-11	CARBON	820	5%	1/4W	
R633	1-249-429-11	CARBON	10K	5%	1/4W	
R634	1-247-895-91	CARBON	470K	5%	1/4W	
R635	1-215-926-00	METAL OXIDE	33K	5%	3W	F
R638	1-249-425-11	CARBON	4.7K	5%	1/4W	
R644	1-249-425-11	CARBON	4.7K	5%	1/4W	
R645	1-249-410-11	CARBON	270	5%	1/4W	
R646	1-247-843-11	CARBON	3.3K	5%	1/4W	
R647	1-249-420-11	CARBON	1.8K	5%	1/4W	
R648	1-535-303-00	LEAD, JUMPER (5.0MM)				
R649	1-535-303-00	LEAD, JUMPER (5.0MM)				
R665	1-249-425-11	CARBON	4.7K	5%	1/4W	
R666	1-249-413-11	CARBON	470	5%	1/4W	
R668	1-249-430-11	CARBON	12K	5%	1/4W	
R674	1-249-410-11	CARBON	270	5%	1/4W	
R675	1-249-387-11	CARBON	3.3	5%	1/4W	
R676	1-249-437-11	CARBON	47K	5%	1/4W	
R677	1-249-437-11	CARBON	47K	5%	1/4W	
R678	1-249-425-11	CARBON	4.7K	5%	1/4W	
R681	1-249-414-11	CARBON	560	5%	1/4W	
R802	1-215-915-71	METAL OXIDE	470	5%	3W	F
R803	1-215-915-71	METAL OXIDE	470	5%	3W	F
R804	1-215-915-71	METAL OXIDE	470	5%	3W	F
R805	1-216-487-11	METAL OXIDE	12K	5%	3W	F
R806	1-249-411-11	CARBON	330	5%	1/4W	
R807	1-247-843-11	CARBON	3.3K	5%	1/4W	
R808	1-216-384-11	METAL OXIDE	0.39	5%	3W	F
R809	1-215-880-00	METAL OXIDE	10	5%	2W	F
R810	1-215-914-11	METAL OXIDE	330	5%	3W	F
R811	1-216-434-11	METAL OXIDE	1.8K	5%	1W	F
R817	1-202-972-61	FUSIBLE	1	5%	1/4W	F
R818	1-249-377-11	CARBON	0.47	5%	1/4W	F
R819	1-249-377-11	CARBON	0.47	5%	1/4W	F
R820	1-214-907-00	METAL	56K	1%	1/2W	
R821	1-247-851-91	CARBON	6.8K	5%	1/4W	
		(KV-28WF3A/28WF3B/28WF3D/28WF3E/28WF3K)				
	1-535-303-00	LEAD, JUMPER (5.0MM)				
		(KV-32WF3A/32WF3B/32WF3D/32WF3E/32WF3K)				
R823	1-249-420-11	CARBON	1.8K	5%	1/4W	
		(KV-28WF3A/28WF3B/28WF3D/28WF3E/28WF3K)				
	1-247-843-11	CARBON	3.3K	5%	1/4W	
		(KV-32WF3A/32WF3B/32WF3D/32WF3E/32WF3K)				
R834	1-247-887-00	CARBON	220K	5%	1/4W	
		(KV-28WF3A/28WF3B/28WF3D/28WF3E/28WF3K)				
R835	1-249-432-11	CARBON	18K	5%	1/4W	
R837	1-249-422-11	CARBON	2.7K	5%	1/4W	
R842	1-249-399-11	CARBON	33	5%	1/4W	
		(KV-28WF3A/28WF3B/28WF3D/28WF3E/28WF3K)				
R843	1-202-822-00	SOLID	2.2K	20%	1/2W	
R844	1-249-424-11	CARBON	3.9K	5%	1/4W	
R845	1-247-881-00	CARBON	120K	5%	1/4W	
R846	1-249-422-11	CARBON	2.7K	5%	1/4W	
R847	1-249-437-11	CARBON	47K	5%	1/4W	
R848	1-249-425-11	CARBON	4.7K	5%	1/4W	
R849	1-249-429-11	CARBON	10K	5%	1/4W	
R850	1-249-389-11	CARBON	4.7	5%	1/4W	F
R851	1-216-399-00	METAL OXIDE	6.8	5%	3W	F
R852	1-247-893-11	CARBON	390K	5%	1/4W	
		(KV-28WF3A/28WF3B/28WF3D/28WF3E/28WF3K)				
	1-247-885-00	CARBON	180K	5%	1/4W	
		(KV-32WF3A/32WF3B/32WF3D/32WF3E/32WF3K)				
R853	1-247-887-00	CARBON	220K	5%	1/4W	
		(KV-28WF3A/28WF3B/28WF3D/28WF3E/28WF3K)				
	1-247-885-00	CARBON	180K	5%	1/4W	
		(KV-32WF3A/32WF3B/32WF3D/32WF3E/32WF3K)				
R854	1-249-436-11	CARBON	39K	5%	1/4W	
R855	1-249-417-11	CARBON	1K	5%	1/4W	
R857	1-202-822-00	SOLID	2.2K	20%	1/2W	
R859	1-249-432-11	CARBON	18K	5%	1/4W	

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REF. NO.	PART.NO	DESCRIPTION	REMARK
R860	1-247-843-11	CARBON 3.3K 5% 1/4W	
R861	1-249-417-11	CARBON 1K 5% 1/4W	
R862	1-249-383-11	CARBON 1.5 5% 1/4W	F
R863	1-216-475-11	METAL OXIDE 120 5% 3W	F
R864	1-535-303-00	LEAD, JUMPER (5.0MM)	
R865	1-249-436-11	CARBON 39K 5% 1/4W	
R866	1-249-432-11	CARBON 18K 5% 1/4W	
R867	1-216-390-11	METAL OXIDE 1.2 5% 3W	F
R868	1-249-418-11	CARBON 1.2K 5% 1/4W	
R871	1-249-441-11	CARBON 100K 5% 1/4W	(KV-28WF3A/28WF3B/28WF3D/28WF3E/28WF3K)
R872	1-247-895-91	CARBON 470K 5% 1/4W	(KV-28WF3A/28WF3B/28WF3D/28WF3E/28WF3K)
R873	1-247-887-00	CARBON 220K 5% 1/4W	
R875	1-247-843-11	CARBON 3.3K 5% 1/4W	(KV-28WF3A/28WF3B/28WF3D/28WF3E/28WF3K)
	1-535-303-00	LEAD, JUMPER (5.0MM)	(KV-32WF3A/32WF3B/32WF3D/32WF3E/32WF3K)
R881	1-249-389-11	CARBON 4.7 5% 1/4W	(KV-28WF3A/28WF3B/28WF3D/28WF3E/28WF3K)
	1-247-791-91	CARBON 22 5% 1/4W	(KV-32WF3A/32WF3B/32WF3D/32WF3E/32WF3K)
R891	1-249-437-11	CARBON 47K 5% 1/4W	(KV-32WF3A/32WF3B/32WF3D/32WF3E/32WF3K)
R892	1-535-143-61	LEAD, JUMPER (5.0MM)	(KV-32WF3A/32WF3B/32WF3D/32WF3E/32WF3K)
R895	1-215-866-11	METAL OXIDE 330 5% 1W	F
R900	1-247-815-91	CARBON 220 5% 1/4W	
R908	1-249-401-11	CARBON 47 5% 1/4W	
R909	1-249-437-11	CARBON 47K 5% 1/4W	
R910	1-249-437-11	CARBON 47K 5% 1/4W	
R911	1-249-425-11	CARBON 4.7K 5% 1/4W	
R912	1-249-421-11	CARBON 2.2K 5% 1/4W	
R913	1-249-425-11	CARBON 4.7K 5% 1/4W	
R914	1-249-421-11	CARBON 2.2K 5% 1/4W	
R919	1-535-303-00	LEAD, JUMPER (5.0MM)	
R921	1-535-303-00	LEAD, JUMPER (5.0MM)	
R922	1-249-406-11	CARBON 120 5% 1/4W	
R923	1-249-406-11	CARBON 120 5% 1/4W	
R925	1-249-429-11	CARBON 10K 5% 1/4W	
R926	1-249-429-11	CARBON 10K 5% 1/4W	
R1598	1-215-922-11	METAL OXIDE 6.8K 5% 3W	F (KV-32WF3A/32WF3B/32WF3D/32WF3E/32WF3K)
R1599	1-215-922-11	METAL OXIDE 6.8K 5% 3W	F (KV-32WF3A/32WF3B/32WF3D/32WF3E/32WF3K)
R1600	1-215-922-11	METAL OXIDE 6.8K 5% 3W	F (KV-32WF3A/32WF3B/32WF3D/32WF3E/32WF3K)
R1601	1-249-437-11	CARBON 47K 5% 1/4W	(KV-32WF3A/32WF3B/32WF3D/32WF3E/32WF3K)
R1602	1-249-421-11	CARBON 2.2K 5% 1/4W	(KV-32WF3A/32WF3B/32WF3D/32WF3E/32WF3K)
R1603	1-249-441-11	CARBON 100K 5% 1/4W	(KV-32WF3A/32WF3B/32WF3D/32WF3E/32WF3K)
R1604	1-249-429-11	CARBON 10K 5% 1/4W	(KV-32WF3A/32WF3B/32WF3D/32WF3E/32WF3K)
R1605	1-249-441-11	CARBON 100K 5% 1/4W	(KV-32WF3A/32WF3B/32WF3D/32WF3E/32WF3K)
R1606	1-215-451-00	METAL 18K 1% 1/4W	(KV-32WF3A/32WF3B/32WF3D/32WF3E/32WF3K)
R1607	1-215-453-00	METAL 22K 1% 1/4W	(KV-32WF3A/32WF3B/32WF3D/32WF3E/32WF3K)
R1608	1-249-413-11	CARBON 470 5% 1/4W	(KV-32WF3A/32WF3B/32WF3D/32WF3E/32WF3K)
R1609	1-215-485-00	METAL 470K 1% 1/4W	(KV-32WF3A/32WF3B/32WF3D/32WF3E/32WF3K)
R1610	1-535-465-11	LEAD, JUMPER (5.0MM)	(KV-32WF3A/32WF3B/32WF3D/32WF3E/32WF3K)
R1611	1-249-417-11	CARBON 1K 5% 1/4W	(KV-32WF3A/32WF3B/32WF3D/32WF3E/32WF3K)
R1612	1-249-427-11	CARBON 6.8K 5% 1/4W	(KV-32WF3A/32WF3B/32WF3D/32WF3E/32WF3K)
R1613	1-249-417-11	CARBON 1K 5% 1/4W	(KV-32WF3A/32WF3B/32WF3D/32WF3E/32WF3K)
R1614	1-249-441-11	CARBON 100K 5% 1/4W	(KV-32WF3A/32WF3B/32WF3D/32WF3E/32WF3K)
R1615	1-249-441-11	CARBON 100K 5% 1/4W	(KV-32WF3A/32WF3B/32WF3D/32WF3E/32WF3K)
R1616	1-249-441-11	CARBON 100K 5% 1/4W	(KV-32WF3A/32WF3B/32WF3D/32WF3E/32WF3K)
R1617	1-535-303-00	LEAD, JUMPER (5.0MM)	(KV-32WF3A/32WF3B/32WF3D/32WF3E/32WF3K)
R1618	1-215-471-00	METAL 120K 1% 1/4W	(KV-32WF3A/32WF3B/32WF3D/32WF3E/32WF3K)
R1619	1-215-469-00	METAL 100K 1% 1/4W	(KV-32WF3A/32WF3B/32WF3D/32WF3E/32WF3K)
R1637	1-215-453-00	METAL 22K 1% 1/4W	(KV-32WF3A/32WF3B/32WF3D/32WF3E/32WF3K)
R1639	1-215-888-00	METAL OXIDE 220 5% 2W	F (KV-32WF3A/32WF3B/32WF3D/32WF3E/32WF3K)
R1640	1-215-918-00	METAL OXIDE 1.5K 5% 3W	F (KV-32WF3A/32WF3B/32WF3D/32WF3E/32WF3K)
R1641	1-247-863-91	CARBON 22K 5% 1/4W	
R1643	1-215-447-00	METAL 12K 1% 1/4W	(KV-32WF3A/32WF3B/32WF3D/32WF3E/32WF3K)
R1644	1-215-469-00	METAL 100K 1% 1/4W	(KV-32WF3A/32WF3B/32WF3D/32WF3E/32WF3K)
R1645	1-249-439-11	CARBON 68K 5% 1/4W	(KV-28WF3A/28WF3B/28WF3D/28WF3E/28WF3K)
	1-249-425-11	CARBON 4.7K 5% 1/4W	(KV-32WF3A/32WF3B/32WF3D/32WF3E/32WF3K)
R1646	1-249-421-11	CARBON 2.2K 5% 1/4W	(KV-28WF3A/28WF3B/28WF3D/28WF3E/28WF3K)
	1-249-415-11	CARBON 680 5% 1/4W	(KV-32WF3A/32WF3B/32WF3D/32WF3E/32WF3K)
R1647	1-535-143-61	LEAD, JUMPER (5.0MM)	(KV-28WF3A/28WF3B/28WF3D/28WF3E/28WF3K)
	1-249-414-11	CARBON 560 5% 1/4W	(KV-32WF3A/32WF3B/32WF3D/32WF3E/32WF3K)
R1648	1-215-875-11	METAL OXIDE 10K 5% 1W	F (KV-28WF3A/28WF3B/28WF3D/28WF3E/28WF3K)
	1-535-303-00	LEAD, JUMPER (5.0MM)	(KV-32WF3A/32WF3B/32WF3D/32WF3E/32WF3K)
R1649	1-249-429-11	CARBON 10K 5% 1/4W	(KV-28WF3A/28WF3B/28WF3D/28WF3E/28WF3K)

The components identified by shading and marked ⚠ are critical for safety
Replace only with the part number specified.

D **VM**

REF. NO.		PART.NO	DESCRIPTION	REMARK
R1650		1-249-429-11	CARBON 10K 5% 1/4W	
			(KV-28WF3A/28WF3B/28WF3D/28WF3E/28WF3K)	
R1651		1-249-399-11	CARBON 33 5% 1/4W F	
			(KV-28WF3A/28WF3B/28WF3D/28WF3E/28WF3K)	
R1652		1-249-421-11	CARBON 2.2K 5% 1/4W	
			(KV-28WF3A/28WF3B/28WF3D/28WF3E/28WF3K)	
R1653		1-249-411-11	CARBON 330 5% 1/4W	
			(KV-32WF3A/32WF3B/32WF3D/32WF3E/32WF3K)	
R1654		1-535-303-00	LEAD, JUMPER (5.0MM)	
R1655		1-535-303-00	LEAD, JUMPER (5.0MM)	
R2701		1-247-863-91	CARBON 22K 5% 1/4W	
R2702		1-247-863-91	CARBON 22K 5% 1/4W	
R2703		1-247-863-91	CARBON 22K 5% 1/4W	
R2704		1-247-863-91	CARBON 22K 5% 1/4W	
R2705		1-249-429-11	CARBON 10K 5% 1/4W	
R2706		1-249-429-11	CARBON 10K 5% 1/4W	
R2707		1-535-303-00	LEAD, JUMPER (5.0MM)	
R2708		1-249-429-11	CARBON 10K 5% 1/4W	
R2713		1-535-303-00	LEAD, JUMPER (5.0MM)	
R2719		1-212-857-00	FUSIBLE 10 5% 1/4W F	
			< SWITCH >	
S601	⚠	1-571-433-21	SWITCH, PUSH (AC POWER)	
S900		1-692-979-11	SWITCH, TACTILE	
S901		1-692-979-11	SWITCH, TACTILE	
S902		1-692-979-11	SWITCH, TACTILE	
			< TRANSFORMER >	
T801		1-427-762-11	TRANSFORMER, FERRITE (HDT)	
T803		1-426-897-11	TRANSFORMER, FERRITE (PMT)	
			(KV-28WF3A/28WF3B/28WF3D/28WF3E/28WF3K)	
		1-427-776-11	TRANSFORMER, FERRITE (PMT)	
			(KV-32WF3A/32WF3B/32WF3D/32WF3E/32WF3K)	
T804		1-429-288-11	HLT (KV-28WF3A/28WF3B/28WF3D/28WF3E/28WF3K)	
		1-429-287-11	HLT (KV-32WF3A/32WF3B/32WF3D/32WF3E/32WF3K)	
T805	⚠	1-453-222-11	TRANSFORMER ASSY, FLYBACK (NX-4003/U2B4)	
			(KV-28WF3A/28WF3B/28WF3D/28WF3E/28WF3K)	
	⚠	1-453-223-11	TRANSFORMER ASSY, FLYBACK (NX-4123/U2B4)	
			(KV-32WF3A/32WF3B/32WF3D/32WF3E/32WF3K)	
T806		1-413-059-00	TRANSFORMER, FERRITE (DFT)	
			(KV-28WF3A/28WF3B/28WF3D/28WF3E/28WF3K)	
T807		1-426-896-11	TRANSFORMER, FERRITE (DFT)	
			(KV-32WF3A/32WF3B/32WF3D/32WF3E/32WF3K)	
			< THERMISTOR >	
TH801		1-800-193-00	THERMISTOR	
			**********	
		*A-1644-084-A	VM BOARD COMPLETE (KV-28WF3A/28WF3B/28WF3D/	
			********** 28WF3E/28WF3K)	
		*A-1644-089-A	VM BOARD COMPLETE (KV-32WF3A/32WF3B/32WF3D/	
			********** 32WF3E/32WF3K)	
		4-382-854-11	SCREW (M3X10), P, SW (+)	
			< CAPACITOR >	
C1701		1-104-661-91	ELECT 330MF 20% 16V	
C1702		1-163-241-11	CERAMIC CHIP 39PF 5% 50V	
C1704		1-161-830-00	CERAMIC 0.0047MF 500V	
C1706		1-107-638-11	ELECT 33MF 20% 160V	
C1707		1-126-964-11	ELECT 10MF 20% 50V	
C1708		1-163-075-00	CERAMIC CHIP 0.047MF 50V	
C1709		1-104-999-11	FILM 0.1MF 5% 200V	
C1710		1-136-203-11	FILM 0.01MF 10% 250V	
C1711		1-162-318-11	CERAMIC 0.001MF 10% 500V	
C1712		1-107-667-11	ELECT 2.2MF 20% 160V	
C1713		1-162-318-11	CERAMIC 0.001MF 10% 500V	
C1714		1-136-203-11	FILM 0.01MF 10% 250V	
C1715		1-163-001-11	CERAMIC CHIP 220PF 10% 50V	
C1716		1-126-964-11	ELECT 10MF 20% 50V	
C1718		1-126-934-11	ELECT 220MF 20% 16V	
C1719		1-126-964-11	ELECT 10MF 20% 50V	
C1722		1-101-810-00	CERAMIC 100PF 5% 500V	
			(KV-28WF3A/28WF3B/28WF3D/28WF3E/28WF3K)	
		1-535-303-00	LEAD, JUMPER (5.0MM)	
			(KV-32WF3A/32WF3B/32WF3D/32WF3E/32WF3K)	
C1723		1-126-791-11	ELECT 10MF 20% 16V	
C1724		1-101-810-00	CERAMIC 100PF 5% 500V	
C1725		1-163-227-91	CERAMIC CHIP 10PF 0.5PF 50V	
			< CONNECTOR >	
CN1701		*1-774-418-11	CONNECTOR, BOARD TO BOARD 8P	
			(KV-28WF3A/28WF3B/28WF3D/28WF3E/28WF3K)	
		*1-770-723-11	CONNECTOR, BOARD TO BOARD 8P	
			(KV-32WF3A/32WF3B/32WF3D/32WF3E/32WF3K)	
CN1830		1-568-882-51	PIN, CONNECTOR 7P	
			< DIODE >	
D1701		8-719-914-43	DIODE DAN202K	
D1702		8-719-914-42	DIODE DA204K	
D1704		8-719-982-37	DIODE MTZJ-39C	
D1705		8-719-982-37	DIODE MTZJ-39C	
D1706		8-719-914-42	DIODE DA204K	
D1708		8-719-914-42	DIODE DA204K	
D1709		8-719-914-42	DIODE DA204K	
			< COIL >	
L1701		1-216-296-91	SHORT 0	
L1702		1-408-598-31	INDUCTOR 3.9UH	
			< TRANSISTOR >	
Q1701		8-729-901-59	TRANSISTOR BF199	
Q1702		8-729-216-22	TRANSISTOR 2SA1162-G	
Q1703		8-729-017-05	TRANSISTOR 2SA1837	
			(KV-28WF3A/28WF3B/28WF3D/28WF3E/28WF3K)	
Q1704		8-729-620-06	TRANSISTOR 2SC3052-EF	
Q1705		8-729-017-06	TRANSISTOR 2SC4793	
			(KV-28WF3A/28WF3B/28WF3D/28WF3E/28WF3K)	
Q1706		8-729-620-06	TRANSISTOR 2SC3052-EF	
Q1707		8-729-620-06	TRANSISTOR 2SC3052-EF	
Q1708		8-729-901-59	TRANSISTOR BF199	
Q1710		8-729-216-22	TRANSISTOR 2SA1162-G	
Q1711		8-729-039-27	TRANSISTOR BC546B	
Q1712		8-729-039-25	TRANSISTOR BC556B	

VM

REF. NO.	PART.NO	DESCRIPTION				REMARK
		< RESISTOR >				
R1701	1-216-025-00	RES,CHIP	100	5%	1/10W	
R1702	1-249-413-11	CARBON	470	5%	1/4W	
R1703	1-216-174-00	RES,CHIP	100	5%	1/8W	
R1704	1-249-418-11	CARBON	1.2K	5%	1/4W	
R1705	1-247-736-11	CARBON	56	5%	1/2W	F
R1706	1-249-414-11	CARBON	560	5%	1/4W	F
R1707	1-249-411-11	CARBON	330	5%	1/4W	
R1709	1-249-412-11	CARBON	390	5%	1/4W	
R1710	1-216-295-00	SHORT	0			
R1711	1-249-432-11	CARBON	18K	5%	1/4W	
R1712	1-216-085-00	RES,CHIP	33K	5%	1/10W	
R1713	1-216-083-00	RES,CHIP	27K	5%	1/10W	
R1714	1-216-073-00	RES,CHIP	10K	5%	1/10W	
R1715	1-215-866-11	METAL OXIDE	330	5%	1W	F
		(KV-28WF3A/28WF3B/28WF3D/28WF3E/28WF3K)				
	1-215-888-00	METAL OXIDE	220	5%	2W	F
		(KV-32WF3A/32WF3B/32WF3D/32WF3E/32WF3K)				
R1716	1-249-417-11	CARBON	1K	5%	1/4W	F
R1717	1-249-432-11	CARBON	18K	5%	1/4W	
R1718	1-249-412-11	CARBON	390	5%	1/4W	
R1719	1-249-416-11	CARBON	820	5%	1/4W	
R1720	1-216-089-00	RES,CHIP	47K	5%	1/10W	
R1721	1-249-414-11	CARBON	560	5%	1/4W	
R1722	1-216-295-00	SHORT	0			
R1723	1-249-429-11	CARBON	10K	5%	1/4W	
R1724	1-216-689-11	RES,CHIP	39K	5%	1/10W	
R1725	1-249-413-11	CARBON	470	5%	1/4W	
R1726	1-216-033-00	RES,CHIP	220	5%	1/10W	
R1727	1-249-402-11	CARBON	56	5%	1/4W	F
R1729	1-216-166-00	RES,CHIP	47	5%	1/8W	
R1730	1-216-121-91	RES,CHIP	1M	5%	1/10W	
R1731	1-216-049-00	RES,CHIP	1K	5%	1/10W	
R1735	1-216-049-00	RES,CHIP	1K	5%	1/10W	
R1736	1-247-807-31	CARBON	100	5%	1/4W	
R1737	1-216-075-00	RES,CHIP	12K	5%	1/10W	
R1738	1-216-174-00	RES,CHIP	100	5%	1/8W	
R1739	1-216-222-00	RES,CHIP	10K	5%	1/8W	
R1740	1-216-174-00	RES,CHIP	100	5%	1/8W	
R1741	1-216-166-00	RES,CHIP	47	5%	1/8W	
R1743	1-216-021-00	RES,CHIP	68	5%	1/10W	
R1744	1-216-150-91	RES,CHIP	10	5%	1/8W	
R1745	1-216-150-91	RES,CHIP	10	5%	1/8W	

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REF. NO.	PART.NO	DESCRIPTION	REMARK

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Replace only with the part number specified.

REF. NO.	PART.NO	DESCRIPTION	REMARK
		MISCELLANEOUS	
		**********	
⚠	1-251-317-31	CAP ASSY, HIGH VOLTAGE	
⚠	1-411-893-11	COIL, DEMAGNETIZATION	
			(KV-28WF3A/28WF3B/28WF3D/28WF3E/28WF3K)
⚠	1-416-450-11	COIL, DEMAGNETIZATION	
			(KV-32WF3A/32WF3B/32WF3D/32WF3E/32WF3K)
	1-452-032-00	MAGNET, DISC; 10MM Ø	
	1-452-094-00	MAGNET, ROTATABLE DISC; 15MM Ø	
	1-452-724-11	COIL, NA ROTATION (RT-165)	
⚠	1-453-222-11	TRANSFORMER ASSY, FLYBACK (NX-4003/U2B4)	
			(KV-28WF3A/28WF3B/28WF3D/28WF3E/28WF3K)
⚠	1-453-223-11	TRANSFORMER ASSY, FLYBACK (NX-4123/U2B4)	
			(KV-32WF3A/32WF3B/32WF3D/32WF3E/32WF3K)
	1-505-782-11	SPEAKER (7X13CM)	
⚠	1-571-433-21	SWITCH, PUSH (AC POWER)	
	1-693-338-11	TUNER (VIF)(AEP)	
			(KV-28WF3A/28WF3D/28WF3E/28WF3K)
			(KV-32WF3A/32WF3D/32WF3E/32WF3K)
	1-693-340-11	TUNER (VIF)(FR) (KV-28WF3B/32WF3B)	
⚠	1-756-286-11	CORD, POWER	
⚠	8-451-433-11	DEFLECTION YOKE (Y28GICM)	
			(KV-28WF3A/28WF3B/28WF3D/28WF3E/28WF3K)
⚠	8-451-485-11	DEFLECTION YOKE (Y32C2C2-M)	
			(KV-32WF3A/32WF3B/32WF3D/32WF3E/32WF3K)
⚠	8-453-005-31	NECK ASSY, NA297-M3	
			(KV-28WF3A/28WF3B/28WF3D/28WF3E/28WF3K)
⚠	8-453-011-11	NECK ASSY, NA299-M	
			(KV-32WF3A/32WF3B/32WF3D/32WF3E/32WF3K)
⚠	8-737-781-05	PICTURE TUBE (SD-284T) (W66LGY060X)	
			(KV-28WF3A/28WF3B/28WF3D/28WF3E/28WF3K)
⚠	8-735-037-05	PICTURE TUBE (SD-297) (W76LHT060X)	
			(KV-32WF3A/32WF3B/32WF3D/32WF3E/32WF3K)
		**********	
		ACCESSORIES AND PACKAGING MATERIALS	
		**********	
	1-769-175-21	CABLE, ANTENNA (WITH FILTER)	
	4-204-008-01	ADDENDUM, ANTENNA CABLE	
	4-395-957-01	BAG, PROTECTION	
			(KV-28WF3A/28WF3B/28WF3D/28WF3E/28WF3K)
	4-029-168-01	BAG, PROTECTION	
			(KV-32WF3A/32WF3B/32WF3D/32WF3E/32WF3K)
	4-203-885-01	INDIVIDUAL CARTON	
			(KV-28WF3A/28WF3B/28WF3D/28WF3E/28WF3K)
	4-203-902-01	INDIVIDUAL CARTON	
			(KV-32WF3A/32WF3B/32WF3D/32WF3E/32WF3K)
	4-203-883-01	CUSHION (UPPER) (ASSY)	
			(KV-28WF3A/28WF3B/28WF3D/28WF3E/28WF3K)
	4-203-900-01	CUSHION (UPPER) (ASSY)	
			(KV-32WF3A/32WF3B/32WF3D/32WF3E/32WF3K)
	4-203-883-01	CUSHION (LOWER) (ASSY)	
			(KV-28WF3A/28WF3B/28WF3D/28WF3E/28WF3K)
	4-203-901-04	CUSHION (LOWER) (ASSY)	
			(KV-32WF3A/32WF3B/32WF3D/32WF3E/32WF3K)
	4-203-908-01	CUSHION (REAR)	
			(KV-32WF3A/32WF3B/32WF3D/32WF3E/32WF3K)
	4-204-132-41	MANUAL, INSTRUCTION	(KV-28WF3A/32WF3A)
			(ITALIAN)
	4-204-132-51	MANUAL, INSTRUCTION	(KV-28WF3B/32WF3B)
			(FRENCH/GERMAN/ITALIAN/DUTCH)
	4-204-132-11	MANUAL, INSTRUCTION	(KV-28WF3D/32WF3D)
			(GERMAN/GREEK/DUTCH/ENGLISH/TURKISH)
	4-204-132-71	MANUAL, INSTRUCTION	(KV-28WF3E/32WF3E)
			(SPANISH/PORTUGUESE/FINNISH/
			DANISH/NORWEGIAN/SWEDISH)
	4-204-132-91	MANUAL, INSTRUCTION	(KV-28WF3K/32WF3K)
			(POLISH/CZECH/ENGLISH/HUNGARIAN)
		REMOTE COMMANDER	
		**********	
	1-473-692-11	COMMANDER, STANDARD TYPE (RM-862)	

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